AMATEUR RADIO

FEBRUARY 1963

1st February, 1963

An Invitation

Dear Fellow Amateur,

Through your magazine I issue to you an invitation to participate in the National Field Day Contest on the 9th and 10th February, 1963.

You may perhaps not be able to place a station in the field, obviously you have certain obligations. However may I ask that during this Contest you at least operate your home rig. By so doing you will help all contestants.

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Vol. 31, No. 2

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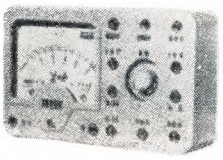

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FEDERAL COMMENT

★

OLD MAN N.F.D.

Every month in the year has some special significance to the Contest-minded Amateur. October is VK-ZL month, March is A.R.R.L. DX month, December-January is Ross Hull time, and February has now become Field Day month.

Yes, the month of February is here again and to an increasing number of enthusiasts, this means dusting off the mobile or portable rig, repairing the camping equipment and migrating to that favourite hill for a day or so to participate in the National Field Day Contest.

Despite the great interest and enthusiasm shown in England and U.S.A. for Field Day events, the Contest here has never enjoyed the same popularity. Yet today, more than ever before, this Contest needs that support. With the advent of the transistor, transmitters and power supplies and even receivers make it an easier proposition than it was, say 10 years ago.

If the Amateur is to increase his stature in the eyes of the public as has been so often propounded, he must be ready and able to operate under real emergency conditions. Here is a means of achieving some practice in this type of operation and at the same time getting away from the stuffy shack.

To misquote the words of a popular song: "Tote that gear, lift that mast, you get a little fun and you land a place (we hope) in the N.F.D." So good luck in this year's Contest, the last to be held under its present title. Let's make it a bumper wind-up to the N.F.D.

FEDERAL EXECUTIVE, W.I.A.

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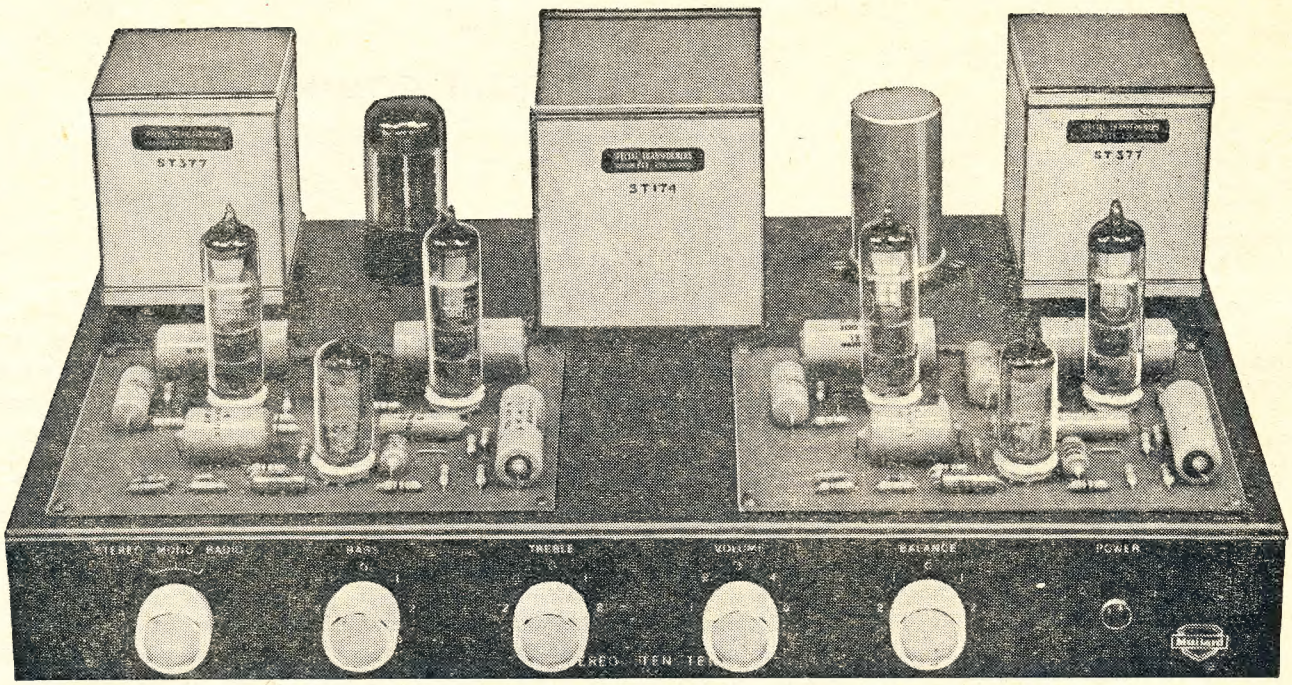

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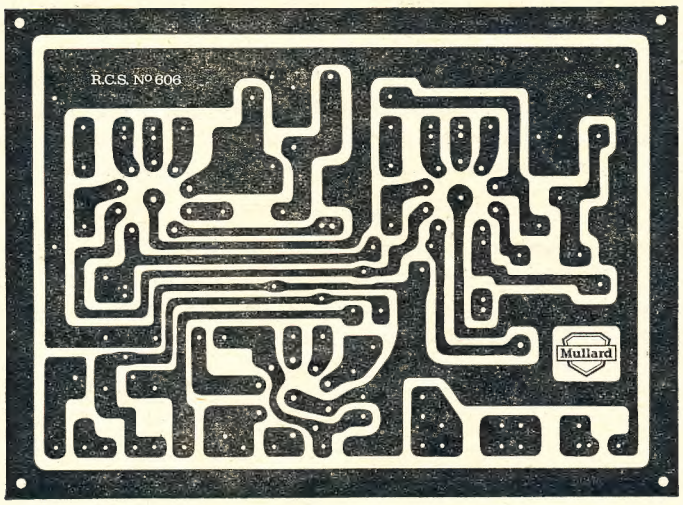

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Surplus-Crystal High-Frequency Filters*

BENJAMIN H. VESTER, W3TLN

● Using the methods and circuits outlined here, the problem of making a usable high-frequency (i.e. in the 4 to 7 Mc. range) crystal filter doesn't sound too tough, even with limited test equipment. If you've been interested in some of the newer transmitting and receiving techniques using filters in this range, here's a way to give them a whirl without a large investment.

AFTER all the recent "QST" articles on uses for high-frequency crystal filters, I've really been coveting one for a mobile s.s.b. transceiver I'm planning. The commercial price tags on filters being what they are, I decided it would have to be built from surplus crystals, or not at all. Having, during the earlier days of s.s.b., suffered with a low-frequency crystal filter (typical report was, "Gee, your voice sounds funny"), I decided to do a little reading before dragging out the soldering iron this time.

An article by Kosowsky† boils a lot of "long-hair" literature on crystal-lattice theory into a fairly simple and understandable form. One of the most interesting points to me was the fact that the crystal filter designer considers the narrow-band high-frequency crystal filter for s.s.b. to be the "easy" design—the problem getting much more exotic for the wide-band high-frequency filter. Since my buddy, W3HEC, was already tackling the tough problem of making a good low-frequency filter with the FT241 crystals, I took the easy way out and tried my hand with the high-frequency unit.

SOME BACKGROUND

If you're planning to try your hand at it, it will help if you grab a few fundamental concepts on crystal lattice filters first. The properties of the crystal itself are pretty well known, the approximate equivalent circuit being shown in Fig. 1 and the change of reactance or impedance being shown in Fig. 2. The crystal has two resonances very close together, L and C being in series resonance at fz, and L, C and Co being parallel resonant at fp. These resonance have been given names by the network theory boys, the series resonance being called a "zero" of impedance (for obvious reasons) and the parallel resonance being called a "pole" of impedance. The symbols used for these are shown in Fig. 2.

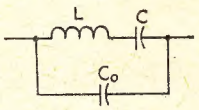

Fig. 1.—The equivalent circuit of a crystal. L and C are the electrical equivalents of mechanical constants of the crystal, while Co is the shunting capacitance of the electrodes and holder.

These poles and zeroes are mighty convenient little symbols for handling networks, the most convenient part being the fact that if you have a circuit with several poles and zeroes, you can often manipulate the circuit values so as to get some of the zeroes each to cancel out a pole. Hence, a circuit with a multitude of resonances (or poles and zeroes) can be arranged to have its response equivalent to only a few resonances.

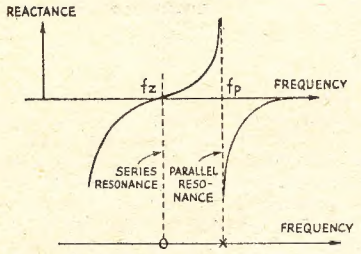

Fig. 2.—Reactance characteristics of a crystal. The series-resonant frequency, fz, is that of L and C (Fig. 1) in series; the parallel-resonant frequency, fp, is the resonant frequency of the parallel circuit formed by L and C in one branch and Co in the other.

The universal crystal filter is a lattice circuit. The lattice is usually developed in full "four-arm" form (i.e. as a bridge circuit) and then the equivalence of the half-lattice is proved. The reader is referred to Kosowsky's article and its bibliography for the full treatment on this. We will settle for a few statements on crystal lattice filters which have been adequately proven by others.

Consider the simple one-section half lattice shown in Fig. 3. The first important point to consider is that the only way in which the lattice can give a high insertion loss between input and output is for the impedances of A and B to be about equal, so that the voltage at their common connection (point O) is equal to the voltage at the coil centre tap. Our crystals will meet the requirement pretty well if they have the same holder capacitance, so the primary problem is to build the coil so that the voltage from Terminals 1 to 2 is exactly the same as the voltage from 3 and 4. The method for realising this will be discussed a little later.

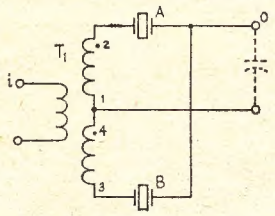

Fig. 3.—The half-lattice crystal filter. Crystals A and B should be chosen so that the parallel-resonant frequency of one is the same as the series-resonant frequency of the other. Very tight coupling between the two halves of the secondary of T1 is required for optimum results.

Crystals A and B are chosen to be different in frequency for the half lattice. Thus it is obvious that if we are at a zero (series resonant) frequency of, say, crystal A, the impedance balance of A and B is spoiled and there is a voltage showing up between point O and the centre of the coil. This will also occur at the pole (parallel resonant) frequency of crystal A. The same can be said for crystal B, only the unbalance is in the opposite direction. This leads us directly into the statement that the pass band of the crystal filter will be as wide as the spacing of all the poles and zeroes. This says nothing about the ripple or variation in transmission in the pass band, however, and if A and B are far apart the ripple or dip may be tremendous. Here's where the network theory boys' trick of pairing off poles and zeroes comes in handy. A little study with Fig. 2 of the way in which the impedance change around a zero differs from that around a pole will give an idea how the lattice crystals can be arranged to give a flat pass band. Fig. 4 shows the desired arrangement. The series-resonant frequency of crystal B is arranged to coincide with the parallel resonant frequency of crystal A. This will theoretically give a perfectly flat pass band from the zero of crystal A to the pole of crystal B.

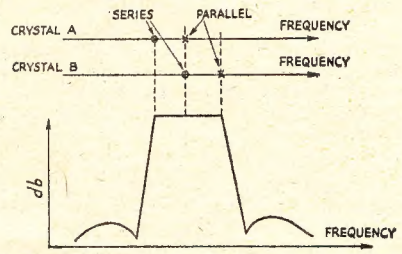

Fig. 4.—The theoretical attenuation-v.-frequency curve of a half-lattice filter shows a flat pass band between the lower series-resonant frequency and higher parallel-resonant frequency of the pair of crystals.

Our problem is now resolved down to determining the pole-zero spacing for the available crystals. The surplus FT243 crystals in the 5 Mc. range (this choice of frequency was obviously based on the excellent results being obtained with the popular HT32 transmitter) have a measured spacing of about 2.2 Kc. between their series and parallel-resonant frequencies. Thus, two of them spaced 2.2 Kc. apart in frequency are theoretically capable of giving a 4.4 Kc. bandwidth. Practically, it is very difficult to get quite this much bandwidth.

If we examine the effects that the external coupling circuitry has on the pole-zero spacing, it can be shown that both an increase and a decrease in the

* Reprinted from "QST," January, 1959.

† Kosowsky, "High Frequency Crystal Filter Design Techniques and Applications," Proceedings of the I.R.E., Meb., 1958.

spacing can be accomplished, by shunting inductance or capacitance, respectively, across the crystal. The most familiar example of this to most of us is in pulling a crystal oscillator's frequency by shunting a capacitor across the crystal. This technique, you will remember, only works where the crystal is being used in its parallel-resonant mode.

Referring back to Fig. 1, it is easily seen that a parallel capacitor makes Co larger and lowers the parallel-resonant frequency (pole). It will not affect the series-resonant frequency (zero), so the effect of the parallel capacitor is to move the pole closer to the zero. Similarly, it can be shown that an inductance shunted around the crystal will push the pole away from the zero; unfortunately, however, this also introduces a second parallel-resonant frequency. Even the network theory boys begin to sweat a little when they begin to manipulate this many poles and zeroes in a lattice circuit, so we Hams had better avoid the complications, and shy away from trying to add tuned inductors on the input and output of the filter. If we are forced to use an inductor, we will make its inductance large enough to avoid its resonating with Co anywhere near the desired pass band.

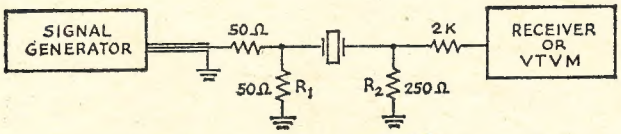

Fig. 5.—Set-up for measuring the series and parallel-resonant frequencies (or pole-zero spacing) of a crystal.

PRELIMINARY MEASUREMENTS

Now that we have some ideas as to how crystal filters work, we will get more specific and look at the procedure by which one may be evolved. To measure the spacing between the series and parallel-resonant frequencies, we must be careful to avoid having the test circuit put shunt capacitance across the crystal and give erroneous results. The circuit in Fig. 5 was used by the writer.

To eliminate the extra shunt capacitance that a socket would add, the crystal holders were soldered directly into the circuit. The signal generator can be most any kind, so long as it has a slow tuning rate—I used one of the Command transmitters. The measurement detector can be a scope, a v.t.v.m. (with r.f. probe), or the station receiver. The low resistance R2 across it should swamp out any small amount of input capacitance it might have. If a receiver is used, a 1K or 2K resistor should probably be put in series with its input to isolate the crystal from the receiver front-end tuned circuits. The series and parallel-resonant frequencies are, of course, at the peak and null of the signal across R2. Any decent communications receiver will measure the frequency difference; best accuracy is obtained by measuring the harmonics of the generator with the receiver in the sharp crystal-filter position.‡

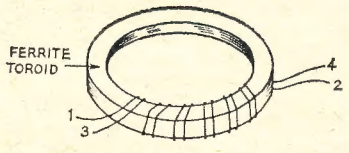

Fig. 6.—Bifilar winding on a toroidal core.

Initial measurements of the two 5645 Kc. crystals I had showed a pole-to-zero spacing of 2.2 Kc. on one and 2.4 Kc. on the other. Their series-resonant frequencies were about 560 cycles apart. I decided to try these out first to get a bearing on the problem.

As indicated earlier, the push-pull coil must have very tight coupling between its two secondaries and should be chosen with a high enough inductance to avoid resonance with the crystal shunt capacitance near the pass band. I used a ¾" ferrite toroid (origin and properties unknown) with the secondaries wound bifilar. The biflar winding is illustrated in Fig. 6. The enclosed LS series coils made by C.T.C. probably would work just as well. (It would probably be very difficult to get tight enough coupling with air-wound coils, however.) I arbitrarily made each half of the secondary coil with an inductance of 50 microhenrys; this required 25 bifilar turns, or 50 turns total. The exact inductance is not at all crucial—the important thing is the tight coupling.

EXPERIMENTAL RESULTS

A filter was constructed with the circuit shown in Fig. 3. It was fed from a low impedance and its output was fed into a 6AK5 mixer grid, the mixer grid effectively shunting some capacitance across the crystals. This mixer was used to beat the filter output signal into a range which was covered by my receiver (a 75A-3) so the receiver could be used for both db. and frequency measurements. The initial response was as shown by curve "A" in Fig. 7. A 10K resistor was then added to terminate the filter and the response squared up (as shown by curve "B") to give a passable 1 Kc. high-frequency filter.

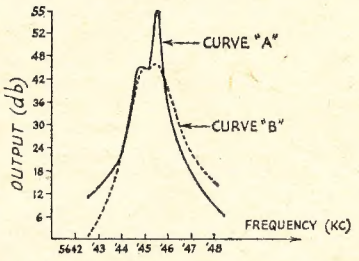

Fig. 7.—Measured attenuation curves of a half-lattice filter using two nominal 5645 Kc. crystals having series-resonant frequencies separated by 560 cycles. A—without resistance termination; B—with 10,000 ohm terminating resistor. In taking the data for these curves and those shown in Figs. 8, 9, and 11, the attenuation was based on the manufacturer's calibration of the receiver used in the tests.

This was sufficiently encouraging, so I dug out the ammonium bifluoride§ etching bath from its hiding place and moved the upper-frequency crystal to a frequency 1,500 cycles above the lower frequency (W2IHW's technique for etching crystals is really simple).

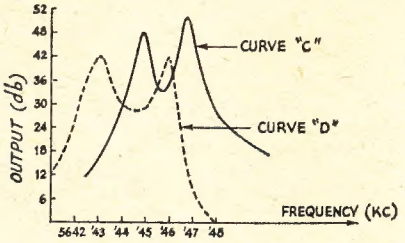

Fig. 8.—Attenuation curves of half-lattice filter with crystals of the same nominal frequency as in Fig. 7, but with 1.5 Kc. separation. C—with 0.5 megohm terminating resistor; D—shunt coil added across the output to resonate with capacitance present at that point.

The initial results with this were anything but encouraging. Curve "C" in Fig. 8 illustrates the results. It was obvious that the capacitance across the lattice output had shoved the poles too close to the zeroes, or else the 0.5 meg. terminating resistor was improper. I tried tuning the capacitance out with a slug-tuned coil and got all kinds of interesting results (curve "D" in Fig. 8 is typical), none of them usable. When I terminated the filter with lower values of resistance, however, the results improved markedly. With just the right resistor, 1.5K in this case, the pass band was flat over a resonable width. Curve "E" in Fig. 9 shows the final results. The bandwidth is just barely great enough for phone use.

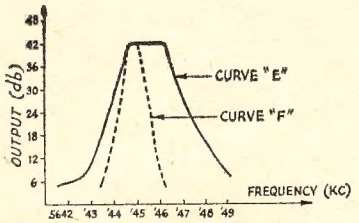

Fig. 9.—E—half-lattice filter using same crystals as in Fig. 8, with 1,500 ohm terminating resistor. F—using two nominal 5645 Kc. crystals separated 300 cycles, with 3,900 ohm terminating resistor.

Since I had one other 5645 Kc. crystal which was 300 cycles from one of the original crystals, I substituted it in and got curve "F" in Fig. 9. This time a 3.9 K terminating resistor gave the flattest pass band.

If greater rejection off the skirts is required, there are several ways in which these sections can be cascaded. Crystals of the same frequency can be paralleled on the half-lattice arms, or an isolating tube can be placed between

‡ I.e., after adjusting the generator to the series-resonant frequency, let the generator alone and shift the receiver to some higher range where a generator harmonic can be heard and its frequency measured. Then shift back to the fundamental frequency, adjust the generator to the parallel-resonant frequency, shift the receiver again and then measure the generator harmonic adjacent to the first one. The frequency separation between the crystals is of course equal to the frequency difference between the harmonics divided by the order of the harmonic. This method usually will give improved accuracy only if the receiver calibration can be read to the same accuracy—e.g., 1 kc. per dial division—on the harmonic range as on the fundamental.—Editor.

§ Newland, "A Safe Method for Etching Crystals," "QST," January 1958.

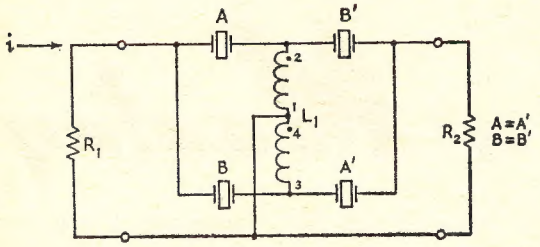

Fig. 10.—Half-lattice filters cascaded in a back-to-back arrangement. The theoretical curve of such a filter has increased skirt selectivity and fewer spurious responses, as compared with a simple half lattice, but the same pass band as the simple circuit.

two sections. A simpler technique is to connect them back to back as shown in Fig. 10. This method of connection will minimise spurious off-frequency response since the probability of getting the spurious responses of crystals A and B to line up with those of crystals A1 and B1 is pretty small. The coil, L1, is again wound bifilar and R1 and R2 are chosen experimentally for the best pass band. The crystals should be matched as closely as you can read their frequency—this is pretty easy with the etching technique.

Fig. 11 shows the response I got from four 7300 Kc. crystals, connected like Fig. 10 (crystals A and A1 were 1.5 Kc. higher than B and B1). The same bifilar coil was used. Incidentally, I got a peep inside one of the 9 Mc. commercial s.s.b. filters recently and they used this circuit. Their filter used an LS-9 coil (C.T.C. Corp.) for L1.

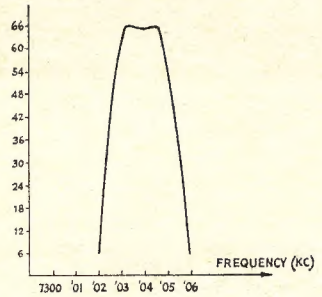

Fig. 11.—Attenuation curve of filter using four nominal 7300 Kc. crystals, pairs separated 1.5 Kc. in the circuit of Fig. 10.

I measured the spacing between series and parallel resonance of a few of the other surplus crystals that were lying around and got the following results:—

Crystal Freq.	Type	Pole-Zero Spacing
8725 Kc.	FT243	2.7 Kc.
7250 Kc.	FT243	2.3 Kc.
7380 Kc.	Plated-surplus	5 Kc.
7010 Kc.	Plated surplus	6 Kc.
8900 Kc.	Plated-harmonic cut	20 Kc.

Obviously, the plated crystals will give wider-band filters.

If you're interested in an asymmetrical filter which has a gradual fall-off on one side, then the circuit shown in Fig. 12 can be used. Here both the crystals are on exactly the same frequency. The coils are again bifilar and C is tuned to give the desired pass band. The potential bandwith here is only half that obtained with the half-lattice. It should work nicely with the plated crystals, however.

I hope this will encourage some of you fellows to try your hand at building filters. I only have a handful of crystals and have only spent a couple of weeks playing with them, so I have not had an opportunity to try all the circuits. ●

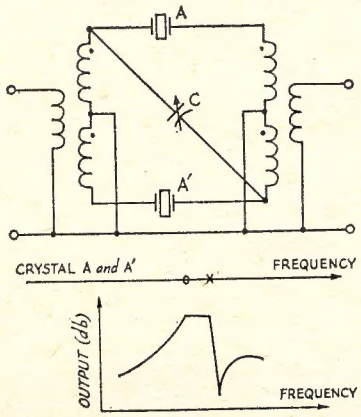

Fig. 12.—An asymmetrical filter and theoretical attenuation curve.

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Readers are requested to submit articles for publication in "A.R.," in particular constructional articles, photographs of stations and gear, together with articles suitable for beginners, are required.

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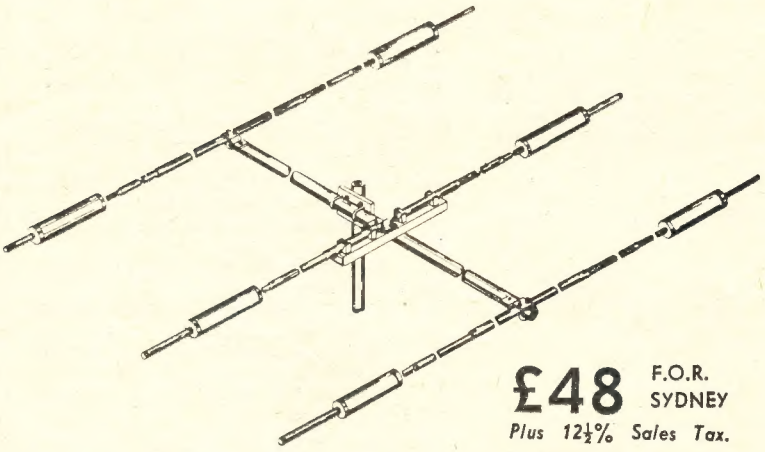

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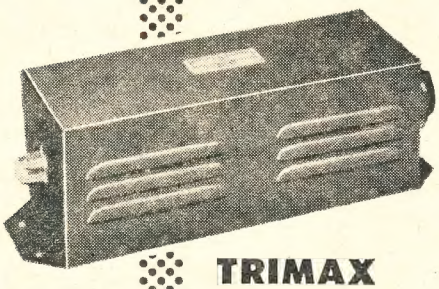

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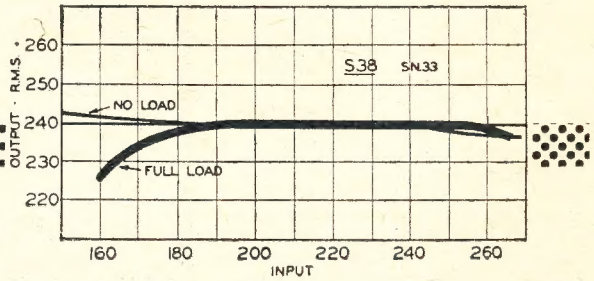

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A Combination S.W.R. Bridge and Amplifier Linearity Indicator*

H. C. SHERROD, W5ZG

● The author presents a unique but simple device for use with a linear r.f. amplifier that indicates relative input and output power, input and output s.w.r., and amplifier linearity deviation.

AN s.w.r. indicator/relative power output indicator is a useful device which is popular because of its simplicity and economy. The usual unit consists of an r.f. sampling device connected in the transmission line and a high resistance d.c. voltmeter. The sampled voltages are rectified to reveal the forward and reflected powers in the line. From this information we can determine the standing wave ratio in the usual manner and the relative power output is indicated by the forward reading.

THE LINEARITY MEASUREMENT

It is important to realise that the forward rectified voltage varies directly with the forward r.f. power in the line. With this thought in mind, consider a linear r.f. amplifier.

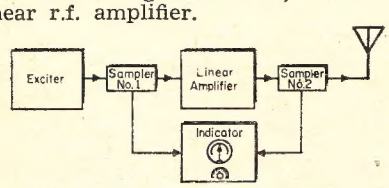


Fig. 1.—Block diagram of the linearity metering setup. Two identical r.f. sampling devices are used with their outputs fed into a comparison circuit. The adjusting potentiometer is calibrated in db. and indicates the gain of the linear.

Within the limits of linearity, the ratio of output power to input power is constant. If identical r.f. sampling devices are inserted in the input and output coaxial lines of such an amplifier, as shown in Fig. 1, the ratio of the forward rectified voltages from the two sampling units will be constant within the limits of linearity of the amplifier.

By using a zero-centre scale voltmeter and a comparison circuit with a potentiometer for equalising the ratio of the forward rectified voltages from the sampling devices, a visual indication of the linearity deviation can be obtained. The indication is derived from true dynamic conditions. Since the adjustment of the equalising potentiometer is a function of the power gain of the amplifier, this potentiometer can be calibrated in terms of db. gain or other acceptable units.

Data for the calibration of the potentiometer in db. is given in Table 1 and the derivation of Table 1 is explained at the end of this article. This potentiometer can be calibrated with a reliable ohmmeter.

Gain, db.	X, Ohms	Y, Ohms
0	10,000	0
2	8,854	1,146
4	7,738	2,262
6	6,677	3,323
8	5,695	4,305
10	4,805	5,195
12	4,015	5,985
14	3,326	6,674
16	2,736	7,264
18	2,236	7,764
20	1,818	8,182

Table 1.—Calibration data for the Linearity Balance potentiometer. Areas X and Y of the potentiometer are identified in Fig. 2.

* Reprinted from "CQ," October, 1962.

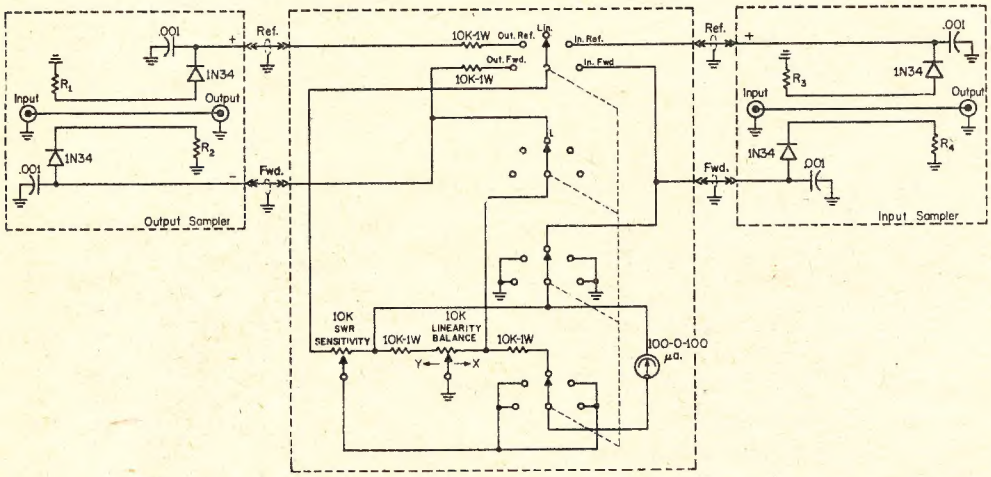


Fig. 2.—Circuit of the S.W.R. Bridge/Linearity Indicator. The value of resistors R1 to R4 is determined by the coaxial cable impedance. For 52 ohms 175 ohms 1 watt carbon resistors are used. For 72 ohm coax, the value should be approximately 240 ohms.

As explained, two r.f. sampling devices and a zero-centre meter are required to indicate linearity deviation. By incorporating a switch, an additional potentiometer and a few resistors, the meter and sampling devices can be connected to indicate the functions listed below:—

Amplifier Input—Relative Forward Power.
Amplifier Input—Reflected Power—S.W.R.
Linearity Deviation.
Amplifier Output—Reflected Power—S.W.R.
Amplifier Output—Relative Forward Power.

CONSTRUCTION

The circuit of the complete unit is shown in Fig. 2. The operation of the two s.w.r. bridges is conventional and is described in the handbooks. The instrument housing should be large enough to contain the two potentiometers, the five-section switch and the four 10K, 1 watt, resistors. The four phono jack type connectors are located on the rear of the cabinet. Wiring is not particularly critical.

Construction data for the line samplers is shown in Fig. 3. The units are made from 1" aluminium angle stock. The main conductor, 3/16" o.d. copper tubing, is connected to the two hot lugs of the coax connectors (in this case type C) and if the measurements are followed exactly, they will be 3-7/8", centre to centre.

The ¼" thick polystyrene blocks support the two 12 gauge copper wire sampling lines.

Fig. 4 shows a suggested panel arrangement of the unit and a tabulation of meter readings against the standing wave ratio. A photograph of the unit is not shown since it is an integral part of the author's 1kw. linear amplifier and would show very little if any detail.

OPERATION

Application of this unit is explained for each function.

Input S.W.R.—Throw the selector switch to the **input forward** position. Apply carrier excitation to the amplifier and adjust the s.w.r. **sensitivity** control for full scale deflection of the meter. Throw selector switch to **input reflected** position and adjust grid circuit tuning of the r.f. amplifier for minimum meter reading.

Output S.W.R.—Throw the selector switch to **output forward** position and, with carrier, adjust s.w.r. **sensitivity** control for full scale deflection of meter. Throw selector switch to **output reflected** position and read standing wave ratio of amplifier load.

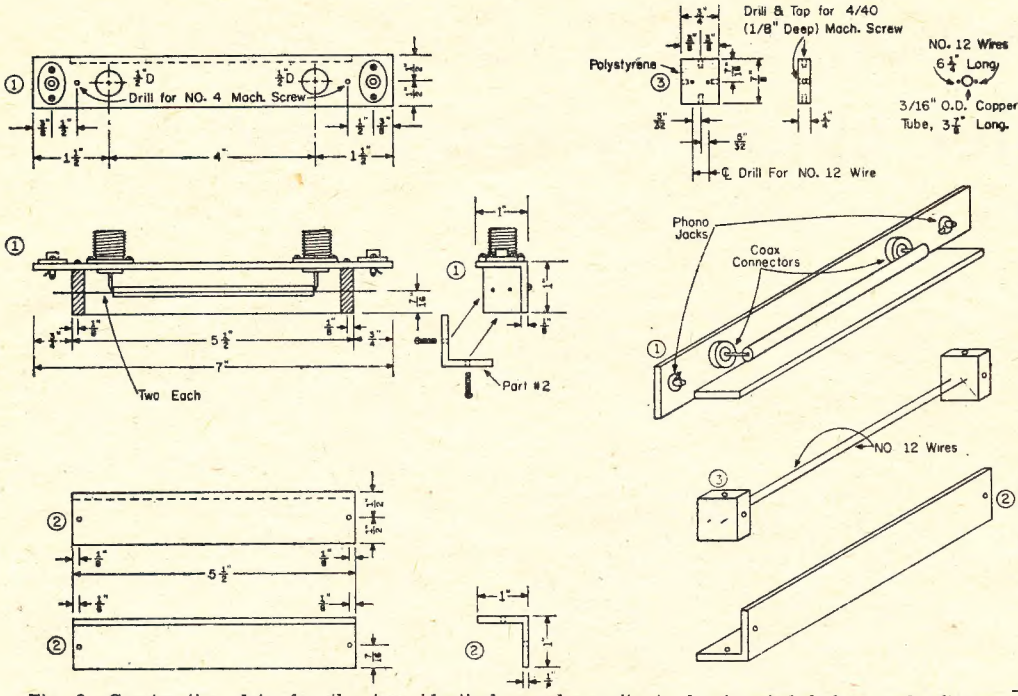

Drill for NO. 4 Mach. Screw
Drill & Tap for 4/40 (1/8" Deep) Mach. Screw
Polystyrene
NO. 12 Wires 6½" Long
3/16" O.D. Copper Tube, 3½" Long.
℄ Drill For NO. 12 Wire
Phono Jacks
Coax Connectors
Two Each
Part #2
NO 12 Wires

Fig. 3.—Construction data for the two identical sampler units to be inserted before and after the linear amplifier. The stock is ⅛ x 1 inch aluminium angle.

Linearity.—With full carrier inserted, and the amplifier operating under full load, throw selector switch to **linearity** position and adjust the linearity **balance** potentiometer for zero meter reading. Remove full carrier excitation and place amplifier in normal operating condition. If the amplifier is linear, the indicating meter will not deviate from zero during amplifier operation. When the linearity **balance** potentiometer is adjusted as described, the potentiometer setting indicates the db. gain of the amplifier.

As indicated previously, in linear operation there should be no shift in the meter indication at all. In the absence of linear operation the deviation shown by the meter would vary with the amount of excitation. The shift could be caused by improper grid bias, parasitics, improper plate and/or screen voltage, improper amplifier loading or by any combination of these conditions. The operator should be concerned about any meter deflection of more than five microamperes and should in reality only settle for operation with no meter shift at all.

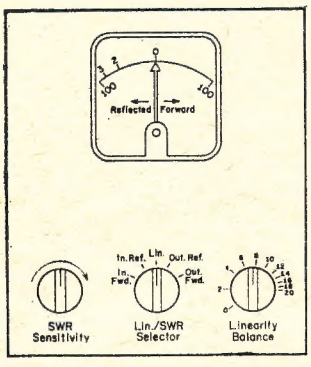


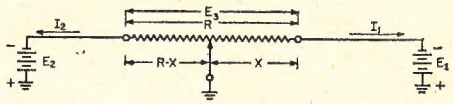
Fig. 4.—Suggested panel arrangement. The s.w.r. calibration marks shown correspond as follows: An s.w.r. of 1 : 1 equals 0 μA., 2 : 1 equals 63.5 μA., 3 : 1 equals 86.6 μA. on the meter scale.

As a zero centre scale meter was required to indicate deviation from linearity, the diode rectifiers in the two r.f. samplings devices were connected to provide d.c. voltages of opposite polarity. With this arrangement, forward power is indicated by a deflection of the meter in one direction. Reflected power is indicated by a deflection of the meter in the opposite direction.

ADDENDUM

While it is not necessary for the construction of the unit, some readers may desire an understanding of the computations involved in determining the resistance points necessary to calibrate the linearity **balance** potentiometer in terms of db. of amplifier gain. The explanation is divided into two parts; first a purely theoretical analysis and secondly, the practical application.

Theoretical Analysis



R = Total potentiometer resistance in ohms.

X = Resistance of portion of pot. to right of arm, in ohms.

R—X = Resistance of portion of pot. to left of arm, in ohms.

E_1 = Voltage across portion of pot. to right of arm.

E_2 = Voltage across portion of pot. to left of arm.

E_3 = Total voltage across pot.

I_1 = Current through X portion of pot.

I_2 = Current through R—X portion of pot.

From the above then:

$E_1 = I_1 X$

$E_2 = I_2 (R - X)$

$E_3 = E_1 - E_2$ (Note polarity)

when $E_1 = E_2$, $I_1 X = I_2 (R - X)$

and $\frac{I_1}{I_2} = \frac{R - X}{X}$

The ratio of voltages E_1 and E_2 can be expressed:

$$\text{db.} = 20 \text{ Log } \left(\frac{E_1}{E_2}\right)$$

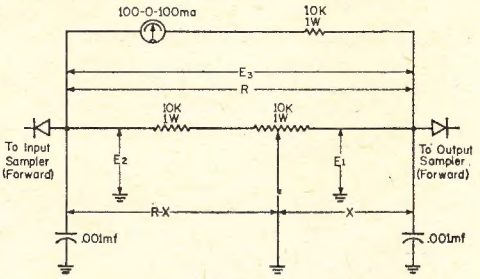
Similarly, the ratio of currents I_1 and I_2 can be expressed:

$$\text{db.} = 20 \text{ Log } \left(\frac{I_1}{I_2}\right)$$

Substituting: $$\text{db.} = 20 \text{ Log } \left(\frac{R - X}{X}\right)$$

Note that when db. = 0, R — X = X. Also, when the pot. is adjusted so that $E_3 = 0$, the pot. setting [(R — X) ÷ X] can be calibrated in db.

Practical Application



From the theoretical analysis it may be seen that, when $E_1 = E_2$, $E_3 = 0$ and

$$\text{db.} = 20 \text{ Log } \left(\frac{R - X}{X}\right)$$

the following chart (Table 2) may be derived as was given in abbreviated form in Table 1. ●

Gain db.	R — X Ohms	X Ohms	$\frac{R-X}{X}$	$\text{Log}\left(\frac{R-X}{X}\right)$
0	10,000	10,000	1.0000	0.0000
2	11,146	8,854	1.2588	0.1000
4	12,262	7,738	1.5848	0.2000
6	13,323	6,677	1.9952	0.3000
8	14,305	5,695	2.5117	0.4000
10	15,195	4,805	3.1621	0.5000
12	15,985	4,015	3.9809	0.6000
14	16,674	3,326	5.0122	0.7000
16	17,264	2,736	6.3100	0.8000
18	17,764	2,236	7.9433	0.9000
20	18,182	1,818	10.0000	1.0000

Table 2.

W.I.A. 50 Mc. W.A.S.

Call	Cer. No.	Add. Cntr.	Call	Cer. No.	Add. Cntr.
VK4HD	27	8	VK5BQ	23	3
VK4ZAZ	26	7	VK7LZ	24	3
VK4ZBE	29	6	VK3ZHF	25	3
VK2WJ	13	4	VK9AU	32	3
VK3ZFM	22	4	VK3ZGZ	28	2
VK3IM	30	4	VK5ZZ/T	31	2
VK4PU	35	4	VK7ZAO	33	2
VK4HR	4	3	VK5ZMK	38	2
VK3PG	5	3	VK7ZAQ	34	1
VK2ABC	8	3	VK5ZBR	37	1
VK2VW	9	3	VK5AX	36	–
VK5GG	19	3			

HIGH FREQUENCY CRYSTAL FILTERS

ARIE BLES, VK2AVA

CRYSTAL filters on frequencies between 5 and 9 Mc. are now being used in many commercial Amateur transmitters and transceivers. The McCoy crystal filter on 9 Mc. can be bought as a separate unit and provides an excellent basis for a simple s.s.b. rig, but the $32.50 U.S.A. price may be a lot higher before it is in your shack.

Some Amateurs have tried filters with FT243 surplus crystals with limited success, regardless of the claims made in articles in "QST," of January 1959, May 1960, and October 1960. The filter bandpass curves published in these articles are difficult to duplicate, at least I have never had success myself.

The advantages of a high frequency filter are obvious. One can save at least one stage or sometimes two stages of frequency conversion. Consequently there are less oscillators producing unwanted spurious frequencies and less risk of frequency conversion and mixing distortion and unwanted by-products. In particular for the v.h.f. bands, a s.s.b. transmitter starting with a 450 Kc. sideband generator will become quite involved.

My earlier experiments were made with a limited supply of 5,000 Kc. crystals. A lot of work is required to not only check their zero and anti-resonance frequencies, but some have to be changed in frequency to obtain matched pairs and invariably one will overshoot the desired frequency and loose crystals. Recently I have had the luck to play with several hundreds of crystals of the same frequencies and that offered a much better chance to arrive at something.

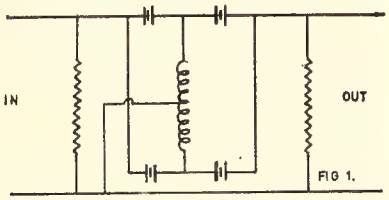


Fig. 1.

As explained in the "QST" articles referred to, the recommended circuit is not a standard half-lattice set-up but a hybrid circuit, using four crystals, two pairs of two crystals closely matched in frequency and between 1,500 and 2,000 cycles in frequency apart. This is being done to make the second higher frequency pair of crystals to fall on the so-called pole-frequency of the first lower frequency pair of crystals.

All crystals, when used as filters, will demonstrate two distinct resonance points, one, the lower frequency one, where the r.f. resistance of the crystal is lowest, its zero resonance point, and a second frequency, higher than the zero resonance point, where the resistance is largest, its parallel or pole frequency point. If the zero frequencies of the second pair match the pole frequencies of the first pair, it is supposed to provide a flat bandpass curve.

The centre tapped tuned circuit (as in Fig. 1) between the four crystals has always given me trouble. Some sources say tight coupling is a necessity, so use a bi-filar wound coil. Others say, no. tune the circuit to resonance and use a standard good quality coil and that will do the trick. Others again say a high quality toroid coil core is a necessity, a.s.o. But all have had trouble to flatten the peaks and valleys in the bandpass. They use rather low resistors at both ends of the filter to swamp the circuit and are obviously trying to smooth out the bandpass curve.

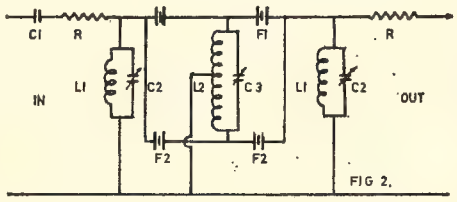


Fig. 2.

C1—0.002 μF.
C2—50 pF.
C3—3-30 pF. Philips trimmer, about half capacity.
L1—Iron slug tuned coil, approx. resonating on 5.5 Mc.
L2—17 turns bi-filar wound litz wire on Command Set iron core (34 turns).
F2—F1 plus 1,500 to 2,000 cycles.
R—2,000 ohms.

I have never been able to lay my hands on a genuine toroid coil core,† so at last tried my luck with a powdered iron core out of the final tank coil of a Command transmitter. It is about ¾" in diameter and ½" long, and the small hole in the centre can be enlarged with an ordinary drill. Seventeen turns of bi-filar wound litz wire and a Philips pot trimmer gave better results than anything I had tried before, but still that blasted trouble to smoothen the humps in the bandpass curve.

Well, to cut a long story short, instead of swamping the filter with resistors I have loaded it with tuned circuits and inserted series resistance in the input and output of the filter. In this manner I could immediately improve the bandpass curve, get an almost perfect flat bandpass with nice steep sides, obtain a good shape factor, and flatten out slight irregularities in the curve with small adjustments of the three tuned circuits in the filter. The procedure is to tune for maximum response on the frequency half way between those of the crystals and next make slight adjustments, one way or the other, of the tuned circuits, no more.

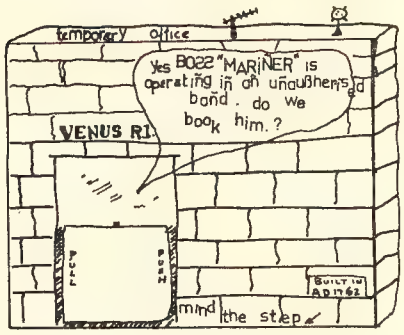
Do not ask me why this arrangement works in preference over and better than what others have used. The main thing is it works well without much trouble of alignment. The series resistances involve some loss of signal but probably much less than parallel resistance swamping; the impedance of this circuit is of course much higher. I shall not apply for a patent on the circuit—yet.

Considering the work involved to select suitable crystals and the fairly large number required to obtain useable pairs that will match, I am going to offer help again to those who want it, like in the case of the 60 odd sets of 400 Kc. crystals that have found their destination.

I have been allowed access to large numbers of crystals, FT243 surplus types, procured by the N.S.W. section of the W.I.A., and am already checking, matching and testing them in this circuit of mine. A set of four crystals, matched in frequency and response, plus two carrier oscillator crystals, selected and etched to fall on the 20 db. down points of the bandpass curve of the particular set of four crystals, on 5436 Kc., or after exhausting the supply of those crystals, elsewhere between 5 and 6 Mc., will be available to genuinely interested Amateurs on direct application to me for three guineas, post paid. ●

* 33 Plateau Road, Springwood, N.S.W.

† A recommended type is the Mullard FX1299. —Editor.



NAT. FIELD DAY 1963

The National Field Day Contest will be held on Saturday, 9th February, and Sunday, 10th February. The rules appeared on page 17 of the last issue.

ADDITIONAL RULE 6A

Entrants to Section C for Multiple Operator Stations can set up separate transmitters to work on different bands at the same time. All such units of a Multiple Operator Station must be located within an area that can be encompassed by a circle not greater than half a mile diameter.

For each transmitter of a Multiple Operator Station a separate log shall be kept with serial numbers starting from 001 and increasing by one for each successive contact. All logs of a Multiple Operator Station shall be submitted by the Operator under whose Call Sign the transmitters are working. No two transmitters of a Multiple Operator Station are permitted to operate on the same band at any time.

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4" 900' **39/–** plus tax 12½%
5" 1800' **64/4** plus tax 12½%
5¾" 2400' **76/8** plus tax 12½%
7" 3600' **118/4** plus tax 12½%

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For Stereo

. . . use a pair of **8WR's**, 2.7 or 15 ohm Voice Coil, 8-3/16" max. diameter, 30 to 15,000 c.p.s., 7 watts peak.
91/3 plus tax 25%

For High Class Mono or Stereo

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The above Speakers all have a gap flux density of 11,500 gauss and a bass resonance of 45 c.p.s.

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280/0/280 V. at 50 mA.
6.3 V. at 1.8 A.
6.3 V. at 600 mA.
16 V. at 450 mA.
20/- plus tax 25%

Power Transformers, A. & R. Type 1916:
325/0/325 V. at 70 mA.
6.3 V. at 2.25 A.
24/- plus tax 25%

Step-Down Transformers, Three Only:
240 V. to 32 V. at 500 Watts.
Fully cased, 2-pin outlet.
To Clear: **£13** plus tax 12½%

Step-Down Transformers, Three Only:
240 V. to 110 V. at 500 Watts.
Open type, conduit entry and exit.
£8/10/0 plus tax 12½%

Power Diodes:
700 mA. at 500 P.I.V.
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Panel Meters:
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67/6 ea. sales tax exempt

Voltage Doubler Transformers:
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3/9 plus tax 25%

2-pin miniature, line-to-panel type.
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Angle type .. .... **9/3 doz.** plus tax 25%
Also available with spade end
.... **7/9 doz.** plus tax 25%

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10 µF. **2/1**
25 µF. **2/4**
50 µF. **2/5**
100 µF. **2/6**

25 Volt Working: 2, 5 and 10 µF., **2/4**
25 µF. **2/5**
50 µF. **3/2**
100 µF. **3/9**

50 Volt Working: 2 and 5 µF. **2/4**
10 µF. **2/5**
50 µF. **3/3**

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MORE ABOUT FT241 SURPLUS CRYSTALS

ARIE BLES, VK2AVA

● The author's recent contribution to Bud Pounsett's s.s.b. column has raised the interest in those very useful FT241A crystals and here is a set of details regarding them.

MILLIONS of these crystals must have been made during the last war as they are still plentiful —unfortunately not in this country. They were made for the SCR508 f.m. transceivers that operated from tanks on frequencies between 20.0 and 38.9 Mc. at 0.1 Mc. intervals. The crystals are marked with these frequencies but their basic frequencies are actually between 370 and 540 Kc. In the tank sets where they were used, the modulation was applied to the crystal oscillator and the resultant phase modulated signal was multiplied 54 or 72 times, depending upon the use of the crystal and the series in which it belongs.

There are two groups of crystals (see Tables next page):—

(a) Those in **black holders,** marked 20.0 to 27.9 Mc. with channel numbers 0 to 79; crystal frequencies 370.370 to 516.667 Kc. (never exact) in steps of 1,851 cycles apart.

(b) Those in **brown holders,** marked 27.0 to 38.9 Mc. with channel numbers 270 to 389; crystal frequencies 375.000 to 540.277 Kc. (may be as much as 250 to 300 cycles off) in steps of 1,389 cycles apart.

Because those crystals had to be used in tanks, they are ruggedly built, but still they may be defective now. The crystals are only about ⅜" to ¼" square, as thin as a normal 7 Mc. crystal, they vibrate transversally, and their size determines their frequency.

They were originally silver or gold plated, small thin wires soldered in the centre of the crystal-electrodes faces, and these small ⅛" wires soldered on to springy sort of suspension wires that are attached to pins spaced ½" apart.

* 33 Plateau Road, Springwood, N.S.W.

I cannot express it in g's acceleration, but know from experience that a good crystal will easily survive a drop on to a concrete floor from a height of four feet (not recommended as a test!).

On the average these crystals are good and vigorous oscillators, but there are bad ones amongst them—discounting the ones where the little wires on the crystal-electrodes faces have come loose (this is mainly due to corrosion of the electrodes and consequent loss of crystal activity). Remedies, however, both for loose contact wires and corroded electrodes are possible.

When one of the little wires has come loose, do not throw away your crystal. If you check the small dot of solder on the crystal electrode, using a magnifying glass or loupe, you will frequently see a little hole in it where the wire has been in before it came loose. Carefully bring the wire back in position, bend one of the spring-wires a little to create some pressure to the crystal and hold the contact wire in place and your crystal very likely will be OK again.

Loss of activity due to corroded electrodes is very common with crystals that were improperly stored, as many must have been. The remedy is to re-silverplate the crystal. There apparently is always enough material left to conduct for plating and you can obtain a crystal that will be active on a lower frequency like a new crystal. For the plating, one could also use a copper-sulphate solution, but it is inferior to silverplating with a silvernitrate solution. Many formulae exist for silverplating, none work as well as a special cyanate professional plating solution that is rather poisonous and must be handled with care.

The frequencies of the crystals can be shifted up and down with extreme care sometimes, but it is possible. To lower the frequency up to over 2,000 cycles, one can weight the electrodes either by silverplating or, for a limited shift, by simply rubbing some carbon on to them with a soft pencil! For that operation, hold the crystal steady between two fingers and watch where the pencil tip goes. If you touch the contact wires too often, they may come loose. Silverplating should be done with not more than 1 mA. plating current. A 1½ volt cell and a 1,000 ohm resistor in series are safe. The crystal should be on the negative side of the battery.

To raise the frequency of the crystal is more difficult. Never try to take off some of the material of the electrodes by reversing the plating procedure. There is never much thickness in the electrodes and you risk that all of a sudden you have a nice clean transparent crystal left! The only way to raise the frequency is by edge-grinding the crystal. Some sources have recommended to unsolder the contact wires and then to hold the crystal in your fingers while edge-grinding. Personally, I prefer to use a pair of small tweezers to hold the sides of the crystal with the bottom part of the crystal-holder still attached and lying flat on the table and gently move a thin grinding stone along one edge of the crystal. I have managed to raise the frequency that way 20 and more Kc.,

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444.444 Kc.	451.852 Kc.	459.259 Kc.	464.815 Kc.	Price per **MATCHED PAIR**
446.296 Kc.	453.704 Kc.	461.111 Kc.	466.607 Kc.	**£3/12/6**
448.148 Kc.	457.407 Kc.	462.963 Kc.	468.519 Kc.	Includes sales tax and one
450.000 Kc.			470.370 Kc.	dual crystal socket.

455.000 Kc. Crystals, £2/0/0 each, includes sales tax and crystal socket.

HC6/U 100 Kc. Marker Crystals, £4/16/0 each, includes sales tax and crystal socket.

FX-1 Type Crystals, 0.001% accuracy: 1,000 Kc., **£5/15/6**; 3,500 Kc., **£4/6/6**

FA-5 Type Crystals, 0.01% accuracy: 1,500 Kc., **£4/17/6**; 7,000 Kc., **£5/8/0**
14,000 Kc., **£6/8/3**; 21,000 Kc., **£5/8/0**

Prices of Crystals on any frequency upon request. Prices include sales tax and ceramic socket.

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but it takes time and patience and one wrong movement and the crystal may be cracked or the contact wires damaged.

For many filter applications the crystals should either be paired in frequency or raised or lowered for oscillator use. For those that smoke too much to have steady hands and fingers, or anyway feel reluctant to touch their crystals, I offer my help to adjust and match the crystals they may have. I could also at the same time set up a sort of crystal exchange bank. A dozen possessors of odd channels of crystals together may have enough to form useable pairs with little adjustments. But not to expect and swap odd frequency ones for the elusive 455 Kc. rocks. Also, after quickly distributing sets of four paired crystals to what I hope some 50 future s.s.b. operators, my stock of crystals is long exhausted and I am going to get a fresh supply somehow from overseas again at reasonable prices. When available it will be announced in "A.R." ●

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FUNDAMENTAL FREQUENCIES OF FT241 CRYSTALS

Channel No.	Fund. Frequency	Marked Frequency	Channel No.	Fund. Frequency	Marked Frequency	Channel No.	Fund. Frequency	Marked Frequency	Channel No.	Fund. Frequency	Marked Frequency	Channel No.	Fund. Frequency	Marked Frequency
0	370.370	20.0	16	400.000	21.6	32	429.630	23.2	48	459.259	24.8	64	488.889	26.4
1	372.222	20.1	17	401.852	21.7	33	431.481	23.3	49	461.111	24.9	65	490.741	26.5
2	374.074	20.2	18	403.704	21.8	34	433.333	23.4	50	462.963	25.0	66	492.593	26.6
3	375.926	20.3	19	405.556	21.9	35	435.185	23.5	51	464.815	25.1	67	494.444	26.7
4	377.778	20.4	20	407.407	22.0	36	437.037	23.6	52	466.667	25.2	68	496.296	26.8
5	379.630	20.5	21	409.259	22.1	37	438.889	23.7	53	468.519	25.3	69	498.148	26.9
6	381.481	20.6	22	411.111	22.2	38	440.741	23.8	54	470.370	25.4	70	500.000	27.0
7	383.333	20.7	23	412.963	22.3	39	442.593	23.9	55	472.222	25.5	71	501.852	27.1
8	385.185	20.8	24	414.815	22.4	40	444.444	24.0	56	474.074	25.6	72	503.704	27.2
9	387.037	20.9	25	416.667	22.5	41	446.296	24.1	57	475.926	25.7	73	505.556	27.3
10	388.889	21.0	26	418.519	22.6	42	448.148	24.2	58	477.778	25.8	74	507.407	27.4
11	390.741	21.1	27	420.370	22.7	43	450.000	24.3	59	479.630	25.9	75	509.259	27.5
12	392.593	21.2	28	422.222	22.8	44	451.852	24.4	60	481.481	26.0	76	511.111	27.6
13	394.444	21.3	29	424.074	22.9	45	453.704	24.5	61	483.333	26.1	77	512.963	27.7
14	396.296	21.4	30	425.926	23.0	46	455.556	24.6	62	485.185	26.2	78	514.815	27.8
15	398.148	21.5	31	427.778	23.1	47	457.407	24.7	63	487.037	26.3	79	516.667	27.9
270	375.000	27.0	294	408.333	29.4	318	441.666	31.8	342	475.000	34.2	366	508.333	36.6
271	376.388	27.1	295	409.722	29.5	319	443.055	31.9	343	476.388	34.3	367	509.722	36.7
272	377.777	27.2	296	411.111	29.6	320	444.444	32.0	344	477.777	34.4	368	511.111	36.8
273	379.166	27.3	297	412.500	29.7	321	445.833	32.1	345	479.166	34.5	369	512.500	36.9
274	380.555	27.4	298	413.888	29.8	322	447.222	32.2	346	480.555	34.6	370	513.888	37.0
275	381.944	27.5	299	415.277	29.9	323	448.611	32.3	347	481.944	34.7	371	515.277	37.1
276	383.333	27.6	300	416.666	30.0	324	450.000	32.4	348	483.333	34.8	372	516.666	37.2
277	384.722	27.7	301	418.055	30.1	325	451.388	32.5	349	484.722	34.9	373	518.055	37.3
278	386.111	27.8	302	419.444	30.2	326	452.777	32.6	350	486.111	35.0	374	519.444	37.4
279	387.500	27.9	303	420.833	30.3	327	454.166	32.7	351	487.500	35.1	375	520.833	37.5
280	388.888	28.0	304	422.222	30.4	328	455.555	32.8	352	488.888	35.2	376	522.222	37.6
281	390.277	28.1	305	423.611	30.5	329	456.944	32.9	353	490.277	35.3	377	523.611	37.7
282	391.666	28.2	306	425.000	30.6	330	458.333	33.0	354	491.666	35.4	378	525.000	37.8
283	393.055	28.3	307	426.388	30.7	331	459.722	33.1	355	493.055	35.5	379	526.388	37.9
284	394.444	28.4	308	427.777	30.8	332	461.111	33.2	356	494.444	35.6	380	527.777	38.0
285	395.833	28.5	309	429.166	30.9	333	462.500	33.3	357	495.833	35.7	381	529.166	38.1
286	397.222	28.6	310	430.555	31.0	334	463.888	33.4	358	497.222	35.8	382	530.555	38.2
287	398.611	28.7	311	431.944	31.1	335	465.277	33.5	359	498.611	35.9	383	531.944	38.3
288	400.000	28.8	312	433.333	31.2	336	466.666	33.6	360	500.000	36.0	384	533.333	38.4
289	401.388	28.9	313	434.722	31.3	337	468.055	33.7	361	501.388	36.1	385	534.722	38.5
290	402.777	29.0	314	436.111	31.4	338	469.444	33.8	362	502.777	36.2	386	536.111	38.6
291	404.166	29.1	315	437.500	31.5	339	470.833	33.9	363	504.166	36.3	387	537.500	38.7
292	405.555	29.2	316	438.888	31.6	340	472.222	34.0	364	505.555	36.4	388	538.888	38.8
293	406.944	29.3	317	440.277	31.7	341	473.611	34.1	365	506.944	36.5	389	540.277	38.9

SIDEBAND TOPICS—BUD POUNSETT,* VK2AQJ

How do you like the new presentation of this department? The general opinion on the air seems to be very much in favour. The success of Sideband Topics depends on YOU.

Do you have anything that is of interest to your fellow sidebanders? If so, **please** send it along to me and also note my new address. The information that I require is items about single sideband or an allied subject of a technical nature. What about, it OM, will you do your bit?

288 Mc. S.S.B.

Lance Harding (VK3AHL), of Melbourne, no longer has the distinction of being the world's only 288 Mc. s.s.b. operator. On December 9, Lance was joined by Jack VK3ZLC. On that Sunday, Lance and Jack made, we believe, the first two-way s.s.b. contact on the 288 Mc. band. These two pioneers have been working together on this project and naturally some of their equipment is identical. Their converters are the same as that outlined in "A.R."

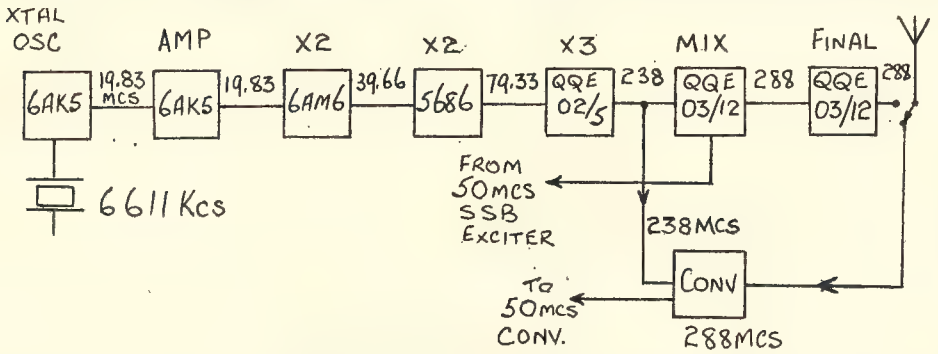

Fig. 1.—VK3ZLC 288 Mc. equipment.

The antennae used are 13 element long yagi beams. There is some difference in the transmitters. Both use 50 Mc. s.s.b. injection, but the VK3ZLC transmitter mixes in a QQE03/12 balanced mixer driving a QQE03/12 linear amplifier to about two to three watts peak output. Congratulations to two worthy gentlemen who are certainly doing their share in upholding one of the best of Amateur traditions.

KWM-1 AND 40

There are a few KWM-1 transceivers in use around Australia and no doubt there will be a few more as time goes by, even though they are no longer in production. The one disadvantage of this very fine equipment is that 40 and 80 metres is not covered, only operation on 20, 15 and 10 being possible.

Recently (August 1962) "CQ" published an article on a converter, or to use the modern term, a transverter, to permit operation on 7 Mc. This takes the form of a receiver front end and an s.s.b. transmitter rear end. It does not require any modification to the M-1. To get to the point in mentioning this "CQ" article, John VK2BM found that an error or two has crept into the original circuit, and to warn you of the traps, here they are.

The 6CL6 driver tube does not have any bias on it. This is easily remedied by placing a 100 ohm resistor bypassed by a 0.01 μF. disc ceramic capacitor between pin 1 and ground. The circuit diagram has pins 4 and 5 as heater connections for the 6146 and these should be pins 2 and 7. The tuned circuit between the transmitter mixer. a 12AT7 and the 6CL6, is a pi network and was replaced by a normal parallel tuned circuit with capacitive coupling. This was found to be easier to adjust.

The crystal in the original was for operation between 7.2 and 7.3 Mc., this being the American 40 metre phone band. For use in Australia the crystal frequency required is 5,700 Kc., which is readily available from disposal sources, having been used in at least two different equipments, a walkie-talkie and a glide path receiver.

For those of you who wish to consult the original article, it is called "Adapter for the KWM-1 to 40 Metres" by Tal Lawrence, 25GVZ and can be found in "CQ" magazine, August 1962, page 32.

RELAY ACCELERATION

You may have the same problem that I had some months ago. I required my vox relay to operate a coaxial antenna relay having auxiliary contacts. The auxiliary contacts are used to control the transmitter and receiver so that antenna change-over and transmitter switch-on are sequenced by the relay. The problem was to shorten the time interval between the first sound into the microphone and the antenna relay operating. The vox relay, a 5,000 ohm squelch relay, from an SCR522 receiver, operates very quickly, but the 6 volt d.c. antenna relay was rather sluggish.

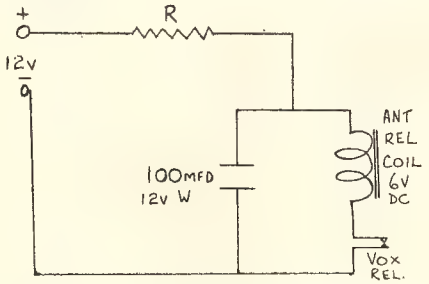

Fig. 2.—Faster Relay Operation.

The circuit in Fig. 2 was used to speed up the operation. With the vox relay open, there is no current flowing in the resistor R and the relay coil, so the voltage at the 100 μF. capacitor is 12 volts. Closing the vox relay contacts discharges the capacitor through the antenna relay coil, pulling the relay in very rapidly. The resistor R now drops the voltage to the correct hold-in voltage for the antenna relay. The value of R can be determined by the application of ohm's law. Do not forget to also take the power dissipated in the resistor into account.

I do not know how fast in milliseconds this system is, but it is rapid enough to cause no noticeable clipping of the first syllable.

OPERATING PROCEDURE

Just two comments this month, one on breaking-in and another about that "ah". Last month I mentioned a suggested form of joining a net. When you do break-in by giving your call sign at an appropriate moment, do so in much the same way as knocking on a door, then wait until you are invited in. When you are invited in, acknowledge all the members in the room—I should say, net—do not just address your remarks to one station and ignore the rest; this is ill-mannered.

Also when a station is calling CQ, try using break-in procedure as soon as you have his call sign. This saves lots of time and breath but does not seem to be in use today so much as it has in the past. You will be surprised how effective this can be used on a DX station. You may be able to beat all the rest who are lined up on the frequency waiting for him to finish his CQ.

How often have you run across the operator who cannot stand to have his vox drop out? This is the one who uses "ahs" and "ers" for commas, full stops and even several of either between paragraphs. How he ever manages to take a breath is beyond me. It is rather difficult to tell him of this exasperating habit—he will not mind if you tell him his signal is broad or distorted if it is, but this "ah, ah, ah" habit! Extreme tact would be required. However there is a way, although not available to everyone. If you have tape replay facilities, you might ask him if he would like to hear his own transmission. One usually listens rather critically to one's own voice, so he is sure to notice. Another method available to every one of us is to listen carefully to the way we speak ourselves. Next time you are having a contact, examine your own speech for these most unnecessary sounds.

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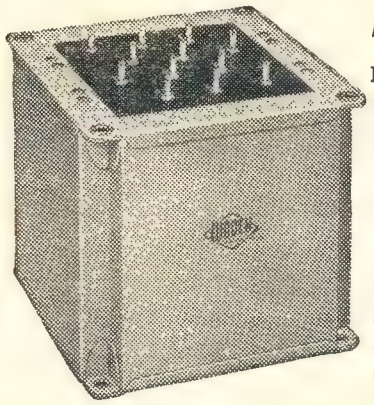

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Ohms.																
2000	2	3—4	5	8600	6350	4300	3620	2150	1070	—	—	—	—	—	200	—
2000	1	2—5	6	15700	11400	7900	6650	3920	1950	—	—	—	—	—	350	—
3000	2	3—4	5	13000	9400	6500	5500	3240	1620	—	—	—	—	—	300	—
3000	1	2—5	6	23500	17000	11800	10000	5900	2950	—	—	—	—	—	520	—
3800	2	3—4	5	16400	12000	8200	7000	4100	2050	—	—	—	—	—	380	—
3800	1	2—5	6	29800	21500	15000	12600	7500	3740	—	—	—	—	—	660	—
4000	2	3—4	5	17400	12500	8650	7300	4300	2160	—	—	—	—	—	400	—
4000	8	9—10	11	—	—	—	—	—	—	5500	3450	2350	1850	1380	—	250
5000	2	3—4	5	21600	15700	10800	9150	5400	2700	—	—	—	—	—	500	—
5000	8	9—10	11	—	—	—	—	—	—	7000	4300	3500	2300	1730	—	300
6000	1	3—4	6	8600	6350	4300	3620	2140	1070	—	—	—	—	—	200	—
6000	8	9—10	11	—	—	—	—	—	—	8300	5150	4250	2750	2180	—	370
6600	1	3—4	6	9500	7000	4750	4000	2350	1180	—	—	—	—	—	220	—
6600	8	9—10	11	—	—	—	—	—	—	9100	5650	4650	3000	2400	—	405
7000	1	3—4	6	10000	7300	5050	4250	2500	1250	—	—	—	—	—	230	—
7000	8	9—10	11	—	—	—	—	—	—	9700	6000	5000	3200	2400	—	430
8000	1	3—4	6	12000	8400	5800	4900	2900	1440	—	—	—	—	—	270	—
8000	8	9—10	11	—	—	—	—	—	—	11000	6900	5650	3700	2760	—	500
9000	1	3—4	6	13000	9400	6500	5500	3200	1620	—	—	—	—	—	300	—
9000	8	9—10	11	—	—	—	—	—	—	12500	7750	6300	4150	3100	—	550
9000	7	9—10	12	—	—	—	—	—	—	6200	3900	3200	2050	1550	—	275
10000	1	3—4	6	14400	10500	7200	6100	3600	1800	—	—	—	—	—	330	—
10000	8	9—10	11	—	—	—	—	—	—	14000	8800	7100	4600	3450	—	600
10000	7	9—10	12	—	—	—	—	—	—	6900	4300	3500	2300	1740	—	310
12000	1	3—4	6	17400	12500	8700	7250	4320	2150	—	—	—	—	—	400	—
12000	7	9—10	12	—	—	—	—	—	—	8300	5150	4250	2750	2070	—	370
14000	7	9—10	12	—	—	—	—	—	—	9700	6000	4800	3200	2440	—	430
16000	7	9—10	12	—	—	—	—	—	—	11000	6900	5600	3700	2780	—	500
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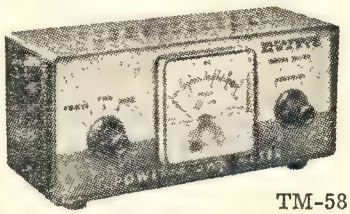

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Sub Editor: BILL ROPER, VK3ARZ,
Lot 59, Orchard Street, Mount Waverley, Victoria
ADDRESS CORRESPONDENCE FOR THIS PAGE DIRECT TO THE SUB EDITOR

In the early days of Amateur Radio, when you worked a station, you automatically sent him a QSL card, quite sure that he would be doing the same. In recent times this practice has diminished (except for the DX seekers on 20 metres, etc.) and in fact there would seem to be little point in exchanging cards with stations contacted in VK on most of the lower frequency bands.

However, there is a point to exchanging QSL cards on the v.h.f. bands—certificates. Certificates such as those issued for the Australian V.h.f. Century Club, the 50 Mc. W.A.S., and for VK3 Amateurs the V.h.f. 100 Certificate.

A large number of v.h.f. operators exchange cards in an effort to qualify for these awards and quite a few send their cards direct via the mails in an effort to expedite a return. (Actually the W.I.A. QSL service is a much cheaper method.)

Naturally enough, not everybody is interested in qualifying for these awards and most of these people do not QSL. This is all right if they indicate to the other station at the time of the contact that they do not wish to exchange cards. But very few of them do this. Whether from guilt, mischievousness, or just plain ignorance, who knows? If only these people would inform their contacts that they do not QSL they would save a lot of fuss and bother and I doubt whether anyone would hold it against them. **Are you one of this group?** If so, how about doing the right thing in the future? Better still, if the other station is chasing an award, why not let him have a card?

The Ross Hull Contest this season has enjoyed excellent band conditions on both 6 and 2 metres. Many times during the Contest 6 mx was open to States and ZL, and on three consecutive days late in Dec., 2 mx opened up between VK4 and VK5/VK3. George 3ZCG tells me that during these days, Dec. 30-31, VKs 4ZWB, 4ZAX, 4ZAZ and 4ZBD worked VKs 3ZCW, 5ZDR, 5ZMK, 5ZK/5, 5BC, 5ZBL, 5ZBX, 5RO, 3ZER/5, 3ZJQ, 5EF, 5WN, 5ZDX, 5WL, 3ZGE/3, 3ZER/3. No doubt there were many more contacts, but this list serves to give some idea of conditions.

Adding a slightly sour note to the terrific breakthrough, I have received several complaints that a few contacts were not made fairly. In other words the intelligence was imparted via 6 mx when the 2 mx signals were only beat notes. I certainly hope that the Amateurs who make contacts like this play the game as far as claiming points in the Ross Hull Contest. 73, VK3ARZ.

NEW SOUTH WALES

50 Mc.: Generally this band was not up to last summer's standard, although all States except VK8 have been worked. Reception of a JA and FK8 was reported on Dec. 30 although this may have been a pirate. There was a good opening to VK6 on 1/1/63 when over 15 W.A. stations were heard.

144 Mc.: A fairly quiet month although there was good activity during the long distance field day on 30th Dec. with the following field stations active: 2RX at Milton, 2ZJH Berowra, 2ZKC Mt. Tomah, 2ANF Mt. Wilson, 2ASZ Mt. McAlister, 2ZBL Duffy's Forest, 2ZVW Smith's Round Hill, 2ZRG Newnes, 2MZ Harboard, 2ZJM and 2ZOO North of Yass, 2ZPJ The Summit (near Oberon), 2ZCF Mt. Gibraltar, 2ZBJ Mt. Bulli, 2ZJC Newnes, 2ZQX Mt. Gibraltar, 2ZAU Kulnura, 2ZIM Mt. Gibraltar, 2AWZ Tumbiumbi, 2OA Mt. Corrackudrei.

The Dec. Fox Hunt, as usual, finished with the President's supper and was held at John ZAV's place as the President's home QTH has a vertically polarised lawn. The tx was hidden in a rubbish pile in the centre of the road with a mattress being used as the antenna. The palcings were as follows: Dave 2AWZ, 1st; Paul 2ZPJ, 2nd; Jim 2ZCW, 3rd. 73, 2ZLB.

VICTORIA

Melbourne: Unfortunately, Peter 3ZLT has had to resign from his position as Publicity Officer and I will be attempting to fill in for a while. The Dec. 2 mx fox hunt was held on Wed. 12th and the turnup was the largest for some time. Bill 3ARZ was the fox and conducted seven hunts during the evening. Competition was keen and finally Tom 3AOG was declared the overall winner, hotly pursued by Ian 3AIU who was ably assisted by his YL Lorna. The Feb. fox hunt will be held on Wed. 13th commencing at 8 p.m. from College Crescent at the rear of the University. Judging by the renewed interest in fox hunting there should be a bumper attendance, so how about coming along and joining in the fun?

The V.h.f. Group meeting was held at 478 Victoria Pde., East Melb., to a standing-room-only attendance. A large amount of business was conducted with, for a change, everybody voting on the various items. After business, everyone adjourned downstairs for supper and a ragchew. And what a ragchew! The diehards did not disperse until after midnight. The Feb. meeting will be held at the same place—the W.I.A. rooms—on Wed. 20th commencing at 8 p.m. **sharp.** The topic to be discussed will be v.f.o's suitable for v.h.f. operation.

The Dec. 2 mx scramble was won by Alan 3ZCJ portable on Mt. Dandenong, and he was control for Jan. scramble on Sun. 13. Fewer stations than usual participated—only 22 all told—and the winner of the city section was Rod 3ZIW with 21 pts., with Ian 3ALZ and Bill 3ARZ tieing for second place with 16 pts. each. Winner of the country section was Alan 3ZNB at Anderson with 20 pts. The Feb. scramble will be conducted on Sunday 10th commencing at 7.45 p.m. Rod 3ZIW will be control and will appear five minutes before the start to explain the rules.

The 6 mx scramble will be held on Sunday, 24th Feb., commencing at the same time.

The Dec. V.h.f. Group field day was a successful event and the last field day for the season will be held on Sunday, 10th Feb. to coincide with the N.F.D. Hours of operation will be from 1000 to 1600 hrs. to tie in with the N.F.D. This will be a competitive event and the scoring table will be identical to the Ross Hull table as published in Dec. "A.R.", except that **portable** stations will use a multiplier of two.

Conditions have been good for the Ross Hull Contest and two high scorers in this State should be George 3ZJQ and Ken 3ZNJ. Do not forget that logs have to be submitted by 13th Feb. 73, 3ARZ.

Eastern Zone: 50 Mc.—Since winter peak the first VK4 was worked on 8/10; the first VK2 on 18/11, and the first VK5 on 24/11, also VK6s on 16/12 and ZLs on 20/11 and 6/12. Es opened here in Gippsland a month earlier that usual, which is what exactly happened on the West Coast of U.S.A. earlier this year. My v.h.f. correspondent told me it also opened there with excellent multihop QSOs during the first week in May instead of the usual first week in June.

In Gippsland, Peter 3ZDP worked a VK9 and a VK7. Stan 3ZAB in Traralgon has had many excellent VK2, 4 and 5 QSOs. Alan 3ZNB, down at Anderson, first 6 mx season for him, also has had some nice QSOs including ZLs. Myself (3ZCG) also been very active on 6, watching the short skip for possible 2 mx QSOs. David 3DY also has been listening to 6 with great interest, however he has no tx but this is about the only band he is unable to transmit on, hi!

Stations active on 144 Mc. in the Zone this season include Ross 3NS (ex 3ZAQ), Ken 3OI (ex 3ZNK), Alan 3ZNB, George 3ZCG, Stan 3ZAB, Graham 3QZ (changing QTH in Traralgon—a much better v.h.f. site), David 3DY (who has moved to a better site in Maffra), and Peter 3ZDP. Sometimes Cliff 3AIT is heard operating. John 3ZFO hopes to get back on shortly, also Bill 3AMH (on s.s.b.). On 28/12 Alan 3ZNB near Wonthaggi worked for the first time tropo into Hobart on 144 Mc. He worked 7ZAQ, 7ZAO and 7ZAI. 73, 3ZCG.

QUEENSLAND

6 metre DX started slowly during Dec. with short opening to VK2, 3, 5, and 7. The following week the band again opened to the south with the usual States workable. For most VK4 stations it provided their first VK1 with 1BP being audible here at S8-9.

The Ross Hull Contest brought forth many old and new call signs and DX was good for the opening days with VK2, 3, 4, 7 being wkd.

From about 19/12/62 conditions were bad until the 29th with 9AU about the only strong signal heard, although northern VK4s made some contacts although signals were weak. The 30th and 31st provided the best 6 mx DX and also the first 2 mx DX for the season, 4ZAX worked 19 stations during the two days and 4ZWB in Dalby worked 13. The most important point to emerge from the openings was that elaborate equipment is not necessary as signals were very strong, S9 plus, during each opening, but the band must be monitored continuously as the openings were very short.

Stations worked in Brisbane were VKs 5ZDR, 5ZK, 3ZCW, 3ZER/P and 3ZJQ. Other stations were most likely worked but a complete list is not available.

New Zealand stations have been worked during the month but signals were only S5-7.

SOUTH AUSTRALIA

50 Mc.: This band has been in excellent form over the month of Dec. All States including VK9 (but excluding VK8) have been worked. At the time of writing scores in the Ross Hull Contest are very high and it will be interesting to see who is the State winner. A number of very short skip openings have been reported, but these are not usually exploited to the fullest, as short skip on 6 usually results in a head-long rush to 2 mx. There were several openings to ZL, with the 50.75 t.v. sound being a useful band indicator.

144 Mc.: This band has been really cracking over Dec. In addition to at least three ionospheric openings (mainly to VK4) we have had some excellent temperature inversions. Max 3ZCW and Hughie 5BC have been working into Adelaide at good signal strength as the result of these inversions.

Ionospheric openings on 144 Mc. occurred on Dec. 30, 31 and Jan. 1. DX was most prolific on the first two days. As at least six openings of this nature have occurred in the past 12 years (most of them in the last two years) it certainly appears as if this frequency has been underestimated. In fact, it seems to be merely a case of waiting for sufficiently short skip on 50 Mc. (about 200-300 miles).

Reports of t.v. DX were manifold during late Dec. and some of the reports, especially concerning high-band t.v., were quite remarkable.

General News: After months of waiting the P.M.G. Dept. has finally given permission to proceed with the beacon project. Unhappily, the beacon will not be on the air for the 1962-63 season, but should be going at speed next season. Frequency 50.5 Mc., keyed c.w., power 30w. to QQE03/20, turnstile antenna. It will be located at ADS7 on Mount Lofty.

On Dec. 29 the Annual V.h.f. Group Social was conducted at Doug 5KK's place. The attendance was very good with 40 to 50 souls being on hand, including 2ZLP/5. Doug had the evening very well organised and the thanks of the Group are extended to him. When you read this, Doug will probably be up in Darwin for about three months.

It is understood that Eugene 5AV may be moving to VK2 in the near future. Barry 5BQ is understood to have successfully cleaned up the garage door when the brakes in his iron horse let go. Mait 5AO has a t.v. signal on 288 Mc. and has been received at 5ZGF. Although Mait owns a vidicon, he is believed to have used a flying spot scanner on the first transmissions. As George 5ZEY has had a t.v. signal of high quality on 288 Mc. for some time, it will be very interesting to see when a two-way contact takes place.

Ron 3ZER and 3ABP were 2 mx mobile in Adelaide over Xmas. 3ABP/M runs a half 6J6 doubler to 144 and is loud and clear (uses a 3 el. beam also). Ron 3ZER/5 worked some of the Interstate 2 mx DX. Newcomers on 50 Mc. include Colin 5ZCZ, Al 5ZC and Steve 5ZSB, all having a ball with the recent conditions. 73, 5ZCR.

WESTERN AUSTRALIA

The W.A. Group held its traditional Xmas fox hunt, Xmas party and barb-q on 15th Dec. Mac 6MM was the fox and used the old adage, if you want to hide anything, put it where everyone can see it. He parked his T model in an open street with the tx under the bonnet and a 300 ohm line went to a dipole strung in a tree alongside the 'ute. Lance 6LR was the first to wake up and was pronounced the winner.

Cocos Is. Beacon: The completed beacon should be operating by the time this goes into print. The units have been shipped to Cocos and VK9LA will be operating it.

(Continued on Page 16)

VHF NOTES

(Continued from Page 15)

50 Mc.: A number of breakthroughs have been observed in VK6. All States with the exception of VK8 have been worked consistently this season. Brian 6VV at Geraldton has been conducting regular skeds with Bob 6BE over the nth./sth. path and has also worked this path on 144 Mc.

Kevin 6ZCB and his XYL Pam went on a DX-pedition to Esperance on the south coast and worked numerous stations in the east.

A number of the Group went to Rottnest Is., 12 miles off the cost, for a week over Xmas. They had both 50 and 144 Mc. gear and among those with call signs were 6DI, 6ZBT, 6ZCP, 6ZDW and, I think, 6ZDX. They worked local stations on both bands and also quite a bit of DX. David 6DI received c.w. sigs from Don 6HK by light beam. Don was using a 50w. spotlight modulated by the power switch. If nothing else, it proves Wembley and Rottnest are line of sight for v.h.f. transmissions.

144 Mc.: There are reports of more activity on this band. Viv. 6ZCM has a 522 operating and has been using it for quite a bit of cross band operating. Neil 6ZDK has been testing a new tx he has almost completed, using a Geloso front-end and an 832 final. It has a built-in modulator. The filaments have been wired to operate off either 6 or 12 volts, so it should be a very versatile unit when completed and operating.

288 Mc.: After conducting test transmissions for some time, the t.v. fraternity had a live night recently. The broadcast, which lasted over two hours, included demonstrations of camera work, building a converter for Amateur t.v. reception, a 144 Mc. link enabled questions on the demonstration to be answered. Jack 6BU had a number of the V.h.f. Group interested in Amateur t.v. at his QTH to view the demonstration.

I would like to pass on the W.A. V.h.f. Group's best wishes for '63 to all our counterparts in other States. 73, 6ZDM.

PAPUA

6 mx produced some good DX openings during Dec. VK4s were worked on 2nd, and on 16th VK2, 3, and 4 were worked. 24th, VK4s worked and 7ZAI heard. VK4s again on 27th. A few weak VK4s and 3s heard on 29th. A rather weak opening occurred on 30th when numerous VK2, 3, 4, and 7 were heard, however only 4ZAZ was worked. A few very weak signals heard on 31st, whilst New Year's Day produced excellent DX, signals being heard and worked for over 12 hours. Call areas worked were VK2, 3, 4, 5, and 7. TE scatter signals on 49.9 Mc. were heard on the 17th.

As 9ZBV has been in Rabaul, no local 2 mx working took place during the month and tests with VK4 produced no results.

T.v. reception was quite good with signals being seen from TNQ7, ABQ2, ABN2, ABV2, ABS2, and ABT2. 73, 9AU.

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Sub Editor: ALAN SHAWSMITH, VK4SS, (Phone 4-6526—7 a.m.-4 p.m.)
35 Whynot St., West End, Brisbane, Qld.
ADDRESS CORRESPONDENCE FOR THIS PAGE DIRECT TO THE SUB EDITOR

After having a good look at the 7 Mc. band for the past 12 months or so, it is possible to form an opinion or two. There is no doubt that the band suffers from lack of activity by rare prefixes. It is a better band for DX than many realise. On most nights it is possible to hear and W.A.C. Often the band may appear quiet when in fact conditions to one particular continent or another may be good, but there are no stations working, e.g. the 7 Mc. band is open almost nightly to Central and North Africa, but very few signals are heard from this area, but those who do come on are at good strength and easily workable.

A tip when working 7 Mc. DX is to QRS. The large number of U stations that constantly provide the QRM, mostly QRQ, so a very slow working signal tends to stand out.

NOTES AND NEWS

YK1AK, Damascus, works around 14080 kc. Has a T8 sig, but strong. QSL via Buro.

4S7NE, SM5CBC/9Q5, ST2AR, VQ4IV, ZS5IU, VU2GG, 9M2FK, 9M2AR, EP2BA, ZE3JO, and 5H3HZ are but a few to be had on 7 Mc. between 1900-2000 G.M.T.

Danny Weil may next work ZM7. However this is not certain. The best way to find out is to keep an ear on 14060 around 0300-0500z when he skeds the States.

Gus W4BPD is due to show up on Tromelin Island. The prefix will be 5R8. This should be a sitter around midnight on the 7 or 14 Mc. bands. Try 14030 kc.

Dick W0MLY was bound for Antiquilla or Navassa Islands, but so far your scribe has not heard him.

CR8AC is active again. May be on Dile longer this time. Skip connections are good for a QSO around 1300z on 14050 kc. He also uses 3512, 7024 kc. as well.

VU2GG works 7015 kc. around 1900z. He is with R.N.A.R.S. and says QSL via Buro. He is very regular.

The 7 Mc. band has been opening the path to Nth. America and should continue to do this for the next couple of months. Sigs heard have been KG1, VO, VE, CT3AB and several Ws. K2HOT and W1IBY being outstanding.

IT1AGA is on almost every day at 1920 on 7005 kc., looking for VK QSOs.

DL1FF wants sked with any VK station on 160 mx. He works on the low end and says some indication of the band condtions can be had by checking on DH254 who sends Vs continuously on 1830 kc. (VK2QL)

W0DCA (ex W4CXA), who worked closely with the late VK2JU at Geneva, will be in Australia during the last part of Feb. (VK2QL)

ZS1A is keeping an ear open for VKs on 3.5 Mc. on the low end. He is also a good one for 7 Mc. (VK2QL)

Alan VR4CV is now working at Mascot. What about a VK call sign for a while Al OM.

The following are by courtesy of Bev Cavender, Florida DX Report, W4CKB: PK land: Ex EP2BK is now in PK land with one of the oil companies. Let's hope he will be able to break the barrier and become active. W8PG, Cocos Keeling. Still no word from VK9LA. He should have received his HT37 quite a while ago.

Campbell Island. ZL4JF is active again—same call, new op. ZL2GX has requested that John hang out around 14050 kc. so we can find him easily. QSLs to ZL2GX.

Crozet Island. FP8XX said that FB8WW should be active about Dec. 24, to be on until the end of January.

Comoro's. 5R8CM will go to Comoro's after the first of the year if he can get off.

Egypt. SU1KX is now active on 14301 kc., s.s.b., 1300 short path.

UD6BR and UD6KAC are now on s.s.b. almost every morning and are causing quite a commotion on the band, usually around 14277. It is rumoured that the UA1CK/UA0 (Tannu Tuva, Zone 23) cards should be mailed through the UA Bureau shortly.

LA9RG/P Spitzbergen (Svalbard) is active on s.s.b. with a KWM-1. Try Friday and Saturday evenings around 0700z on 14252 kc.

LA8SE/P, Jan Mayen, is active from this rare spot at the time of writing. No other info.

ST2AR now has f.b. sig into VK on most mornings from 1700z, 14 Mc.

Danny Weil says after ZM7, it will be FW8—Wallis Is.

VP8GB is reported active from Adelaide Is. Rumour has it that it will count as a new country and separate from all other VP8s. Frequency given is 14080 kc.

Malpelo Island. If you are still waiting for a QSL from HK0TU, relax, as Dale W4DQS is on the job and all will get a card.

From W. land, by courtesy of K6CQV, Bob Murphy, the following:

F2CB/FC is now QRV on 14 Mc. low end. The rumours re the JT1 s.s.b. DX-pedition are definitely not true. There may be a trip next year, but nothing is yet arranged or planned from UA3CR today. ST2AR has finished the s.s.b. rig but is having carrier troubles. Would say that he will be on in three or four weeks. Look for him on 14113 kc. 5T5AI is QRV on 7 Mc. c.w. and 21 a.m. QTH is Box 208, Nouakchott.

9L1HB (ex ZD1 Sierra Leone) was heard on long path on 14 Mc. s.s.b. 4U1ITU/SU is operated by HB9SI around 1300z on 14310 s.s.b. VR5AR on Tonga, try around 14325 kc. s.s.b.

VS1-9M2 news. At present there are four s.s.b. ops. only in this area. VS1AU, VS1KR, VS1JH and 9M2MC. All are active on 20 mx mostly. Robin VS4RS took a trip over to VS1 and met the Pres., VS1FZ, Stan Read, and had eyeball QSO. Active Hams in Sarawak: VS4RS, VS4BY, VS4RB (VS4BY is on s.s.b.). At present there is only occasional activity from ZC5. Will let you know when Ian McAnsh, VS1BU (and ZC5BU) will be going over there again. There is no activity from Brunei.

The 7 Mc. band has a lot of nice prefixes on it between the hrs. of 1700 and 2000 GMT. SM5BCB/9Q5, HM5BF, 9L1RO, 9G1AQ, VU-2GG, VS9ASS, ZS5CI, ST2AR, 5B4TC, EA6AM, EI7JA, CT3AB, CT1DJ and others. All workable, call slowly.

KG6IJ, new op's. name is Cecil. W5QK handles the QSLs for KG6I QSOs.

VK9LA must have his HT37 as he is on s.s.b. around 1100z.

PZ1AX is on 80-20 s.s.b. 1100z. QSL via W2CTN.

ET3JK, ET3LM, ET3GZ are regulars on 14 Mc. around 1900z. (The above by courtesy of VK3TL.)

Pakistan Day DX Contest—APDX. Held on 23rd March each year. Period: 2400 GMT 22nd March to 2400 23rd March. Bands: 7 and 14 Mc. Phone or mixed or c.w. (Here's a chance to win an award and help the AP boys with QSOs.) (VK2RA)

KH6PD/KG6 is reported to be on Marcus Is. (Not confirmed as yet.)

The W4 DX gang of the Florida Club hope to make it to San Felix Is. by end of Feb. Call will be CE0XA. A real rare one.

Ivor VK3XB has USA-CA No. 124 and dated 20th Sept., '62. It would seem that Ivor has made it for first VK. (Nice work, OM.) Ivor also made W.A.S. in Novices on 7 Mc. (also first VK). Ivor runs 150w. to two half waves in phase.

ACTIVITIES

Ted VK5JE, the 7 Mc. specialist, comes up with a nice list. All c.w.: HM4AQ 1150z, HL-9KH 1200z, G5LX 2040, UB5UW 2035, IT1ZGY 2030, LZ1KSZ 2030, G5BZ 1945, DL1FF 2000, Ws 2025 to 2130, DJ2BW 2030, YO3RI 2000, OK1BY 2030, SM5CCE 2000. All times GMT. All Ws on l.p. 7 Mc. QSLs recd. recently are 9Q5AAA, ZK1AT, YJ1MA, VR5AR, W0VEH/VP9, VP6CDI, VP5BL, UC2AR, VQ3HZ, W1MV/KP6, 5H3HD. (Nice work OM. I have nominated you for QRP Club. Congrats. on DXCC—7 Mc. with 40w.)

Les VK4XJ reports on the 28 Mc. band and worked the following c.w./a.m.: KR6CM 1750, W4, W5, W6, VE6AFF, KH6VF, JA2BNG, JA-4OI, W7, W0, W7UXP/KH6, XE1CT, HC2JT, VK6QL, etc. All a.m. during the past few weeks. (I'd appreciate further reports on openings to tropical areas during the next few months OM, vy mni. tks.)

Alex VK2JZ is s.s.b. on 14 Mc., 100w. p.e.p. to 2 el. yagi. He landed these rare ones: G8PO, VS1JH, OA4CK, KX6BU, KH6EHR, JA2AEY, VU2NR, UA4FE, G6XN, KH6EIT, KC4USB, 4X4DK, ET3USN, DL3EA, I1EB, G3NVA, VQ-1GDW, SV1AR, KA5MC, DL1VX, VQ4WLH, ZE1JE, ZS6NE, HB1JZ, ZK2AB, VQ4AA, ZM-6AW, CP5EA, 4X9HQ, CR9AK, VS6BE, I1ZZG, UI8AG, EP2AC, CE3RC, DL1CB, EP2AR, UA-1MU, UA4IB, HS1B, I1RIE, Ws.

Ray VK2RA now has his beam up (TH4 Tribander), and has been testing it with the following QSOs: 7 Mc., c.w., UA4OI, UB5QK. 14 Mc. c.w., KR5KOR/KS6, YU3HY, CR8AC, ZC5FF, AP5JA, UP2NV, JT1KAA, FB8XX, 4X9HQ, ZM6AM, LH4C. 14 Mc., s.s.b.: UA-1KBW, UA0EK, UL7HB, UR2AR, YV5AKP, VR5AA, KJ6BZ, BV1USF, HK3RQ, OE1RZ, LH4C, VS4RS. 21 Mc. c.w., HK1QQ, YN1AA, GI6TK, FB8ZZ, HC1DC, VR3L, UL7FA, SP9RF, F9BO, UB5NN, Europeans, Pacific, etc., VS4RS, UT5HP, I1COW, UH8DA, UB5UW, KR6NAA (Novice), F8RFC. 28 Mc. c.w., W3-0, KH6, KR6LJ, KR6ML, ZK1AR.

Hal VK4DO, who is preparing for a trip overseas, found time for the following DX contacts. 14 Mc. c.w. wkd.: :W, K, JA, KR6, KM6, DL3ZI, HM5BF, OA4CG, UA0, 4S7NE, 9M2UF. 14 Mc. c.w. hrd.: DJ3JZ, DU1OR, F9EA, G3KHA, HK0ZU, JT1KAA, KW6EC, LU-5AQ, LZ1KSZ, OE5PHL, OH1RA, TI2LA, UA-4AR, UA9VX, UC2BI, LU7LA, UR2KAN, XZ-2KN, YO4KCA, ZD9AM. 21 Mc. c.w. wkd.: DL1DV, DJ1US, DL1DC, F2MA, JA, KM6, OE8WB, OK1AFC, UR0LL, VU2BK. 21 Mc. c.w. hrd.: DU1FM, DJ, DL, FB8ZZ, G2KO, GI6TK, HA8KCI, LZ1KNB, KC6BD, OK1ZL, ON5DG, SM7AIA, SP9TA, UA3HK, UB5TL, UR2KAN, UF6FB, VS4RB, 4S7WP, 4X4DH 5B-4PC. 21 Mc. phone hrd.: DU1BM, HB9MX, 4S7BW.

Frank VK2QL lists these wkd.: 3.5 Mc. VE1ZZ, K2DGT, HK1QQ, HL9KH, JA6AK. 7 Mc.: ZM6AW, K2DGT on l.p., VQ4WT, CR8AC, HC1DC, HL9KH, etc. 14 Mc.:: 5U7AC, PJ2AE, 5H3HZ, JT1AG, and others. QSLs recrd. ZM6AB for 80 mx, CT2AE for 40 mx, 6O1MT, 9S4AX, F2CB/FC and the W0MLY/T series. All c.w.

Rick VK3ARX snatched a nice few on 14 Mc. c.w., CT2AL 1000, CT3AB 2000, CP5EZ 1000, KG4AM 2100, LH4C 2000, PJ2AE 0430, ZD6GA 2000, ZD9AM 2100, ZK1BY 1200, ZM-6AW 1100, ZE8JJ 1400, VP8GU 2100, VQ1GDW 1500, TT8AL 2300. All times GMT. (Pse send more OM, Al.)

Norm VK4TY also sends in some very good ones wkd. on 14 Mc. KG4AM, VQ8BL, LU-4OI, VP6RG, VP2MV in Monserrat, ZM6AW, UB5MZ, VU2GG, VU2GO, VU2VDZ, AP5JA, AP5CP, AP5AH, AP5SS, PJ3AO, HB9KO, HZ-1HZ, PZ1CJ, and many others, all on c.w. VK9LA, XE1EK, 4X4IX, ET3LM, HP1B, CN-8MK, KC4USH, VP2LS in St. Vincent, BV1USF, HR1SO, all s.s.b. (Some more each month, pse Norm OB, Al.)

Ken VK3TL sends in a long list of really good ones wkd., some of them being: CE3AG, CP5EZ, HA3KGC, HZ1AB, HZ1HZ, IT1AGA, OH8PL, OZ3SS, PJ2AE, SP9SH, ST2AR, UI8FB, VP2MV (Monserrat), VP6LN, VQ4IQ, VQ8AL, VR3L, VS9AJA, EP2BB, XE1OE, XZ2KN, ZE-5JF, 4X9HQ, 5A2TS, 6O1ND, 5H2HZ. 14 Mc. c.w., DU1JC, EI4Q, EP2AC, ET3LM, KC6BO, KH6PD/KG6 (Marcus Is.), PZ1AX, SV1AE, UD6KAE, VK9LA, VP2ML, VQ2JM, VR3O, XW8AT, YV1EL, ZL1ABZ (Kermadics), 4X-4IX, 9K2AM, all 14 phone. Ken reports Africans good around 1300z.

Pete Drew L6021, who really does a lot of listening, logged these on 20 s.s.b.: BV1USF, MP4BWW, VQ4AA, VQ4ERR, VS9ASS, ZS5L, ZS6BBP, 9K2AM. 40 mx a.m., CU1AS, 9M2DQ. 40 mx c.w., DU1CE, DU7BC, HL9KH, SL8WW, SP3WW, SP9RF, UA1KBR, UA4CE, VQ1GDW, VS1FS, UB5ES, UT5EK, VU2GG, YO2BN, YO-

(Continued on Page 18)

W.P.X.

as at December 1962

C.w.

VK3KB	400	VK3CX	325
VK3XB	387	VK5NQ	317
VK4SS	349	VK6WT	316
VK2APK	346	VK3RJ	310
VK5NO	327	VK4TY	298

Phone

VK6RU	421	VK6KW	303

S.S.B. DX HONOR ROLL

VK3AHO	220	VK4FJ	111
VK4RQ	126		

(Please send your Cert. No. with Scores, and you must have QSLs for all claims.)

DX NOTES

(Continued from Page 17)

3JV, YO7DO, and many others. (Your previous letter missed Dec. early deadline, sorry, Al.)

Ivor VK3XB comes to light with a long list of really good ones, wkd. in the last few weeks. 7 Mc. c.w., G3IMV, KH6DKD, CE1BD, HL9KH, YV3AS, G3JAG, YO9KN, G5DQ, UT-5AA, OE3TL, OH9NV, DU7SV, VR3L, HK0ZU, PJ2AE, YS1O, 4X4HQ, HB9MO, 5B4IP, KP-4AOO, DJ1ZN, I1ZL, DL1QT, YU2YG, UA9PP, DJ2VKC (XYL), G5BZ, SM3AKW, OK2QX, CR8AC, G3MOJ, SP8HOV, etc. 14 Mc. c.w., HK3KG, KC4USX, DJ7CZ, I1WC, SL5CX, F2PO, 4S7NE, UL7KDT, UI8FB, VP2MV, VP-6RG, VR2MV, 5A1TW, ZE8JJ, YV5AE, KG-4AM, etc.

Ivor's XYL, VK3KS, wkd. on 7 Mc., c.w., VS1FZ, DV2VKC (YL op.), VE1ZZ, DJ7CZ, and others. 14 Mc., c.w., UL7KDT, UD6KAK, UB-5CG, G3AAE, KG4AM, UQ2FF, VP2MV, 5A1TW, SM3AAE, PA0LOU, LZ1CF, DU1OR, DL7GS. (Nice teamwork, let's have more notes pse.)

Darrell L5041 heard some choice ones these past few weeks. They are 14 Mc. s.s.b. and between 0800-1100 GMT: VS1AU, VS6BE, VS-6CL, KC4USG, KR6RN, KR6CF, KG6AAY, G8KS, G3JAF, F7AA, SM5RN, AP5DC, OZ3Y, VR2DS, YN1GM, KC4USX, KR6OH, PY2CHM, DL1SM, BY2CWB, HB9ET, HL9KH, etc. 14 Mc. a.m., LU7HJ, BV1USA, AC3AX. (S.s.b. reports always needed, so vy mny tks.)

Bev Davey, VK4BJ, R.A.A.F. Townsville, reports conditions on 20 mx as good around midnight and late afternoons. He wkd. on 14 Mc., BV1USB, CE4AD, DJ1FW, DU7SV, G5WP, GI3IVJ, SM6IJU, UL7KBK, KR6BD, OH2BZ, VQ2WR, OH3UO, VR2EH, VU2KV, ZS2RM, ZS5CI, ZS5JY, 9M2GJ, HM5BF, K2QGC/KG6, etc., and heard a large number of really good ones. (Tks., Bev., it's always good to hear what's happening in the tropics.)

Due to space limitation, it has been necessary to precis some of the above reports. Sorry chaps.)

W.P.X.

Most overseas mags. feature a W.P.X. Honor Roll. Such a list creates interest and competition. So how's about submitting your W.P.X. score. It is tallied by adding the number of countries wkd. to the number of areas contacted within those countries. Let's have a better response than last year's request. When sending in your notes or DX news, please include your W.P.X. score as well. Remember it is an Honor Roll and all claims must have QSL verification. Please indicate your section, i.e., c.w., a.m., s.s.b., or mixed.

SUMMARY

Radio Storm. During such a disturbance signals passing near or through the auroral zones fade out, sometimes entirely if the storm is severe. During this time it is best to concentrate on east-west paths in the daylight hours and on north-south circuits during the morning and evening periods. Usually some band or circuit is workable.

Some of the VKs who helped this page along last year were 2QL, 2AMB, 2QU, 2AXK, 2RA, 2AQJ, 3QV, 3ARX, 3AHO, 3HG, 3TL, 3AZD, 3ZHR, 3AKN, 3ZMS, 4DO, 4XJ, 4BL, 5RX, 5RK, 5ZC, 5JE, 5MY, 5NO, 5NQ, 6SM, 9RO, BERS195, L2022, L2211, L3065, L4001, L6021, L5041 and Rod de Balfour. Let's hear from you all again, and others too, during '63.

73, Al, VK4SS.

P.S.—To facilitate matters, please mark envelope "Radio News".

W.I.A. D.X.C.C.

Listed below are the highest twelve members in each section. New members and those whose totals have been amended will also be shown.

PHONE

Call	Cer. No.	C'nt-ries	Call	Cer. No.	C'nt-ries
VK6RU	2	279	VK3WL	14	211
VK5AB	45	275	VK3ATN	26	204
VK6MK	43	266	VK4HR	12	192
VK3AHO	51	259	VK4RW	23	184
VK4FJ	21	236	VK3GB	50	183
VK6KW	4	211	VK5WO	59	178
Amendment:			**New Member:**		
VK3BM	54	129	VK2JZ	61	180

C.W.

Call	Cer. No.	C'nt-ries	Call	Cer. No.	C'nt-ries
VK3KB	10	305	VK3RP	56	229
VK3CX	26	288	VK3FH	15	226
VK2QL	5	279	VK3BZ	6	222
VK4FJ	29	270	VK2AGH	71	220
VK3NC	19	261	VK4HR	8	218
VK6RU	18	238	VK3XU	48	213
Amendments:					
VK3RJ	42	195	VK2APK	76	174
VK3ARX	66	190	VK3AX	68	136
VK5NQ	73	182			

OPEN

Call	Cer. No.	C'nt-ries	Call	Cer. No.	C'nt-ries
VK2ACX	6	300	VK3AHO	76	262
VK6RU	8	289	VK3HG	3	257
VK4FJ	32	276	VK4HR	7	233
VK6MK	74	269	VK3BZ	4	231
VK3NC	77	265	VK3JA	43	229
VK2AGH	83	265	VK3WL	45	225
Amendments:			**New Member:**		
VK6KW	13	221	VK2AXK	89	102
VK5NQ	81	200			
VK2APK	82	180			

V.H.F. TWO-WAY RADIO FOR PRIVATE AIRCRAFT

Ferris Bros. Pty. Ltd. have announced the signing of a contract with Rex Aviation Pty. Ltd. to manufacture v.h.f. two-way radio equipment for installation in private aircraft, in particular the Cessna range which is distributed in Australia by Rex Aviation.

Developed by Rex Aviation engineers, the set has been approved by D.C.A. Ferris are confident that their experience in the manufacture of mobile-type electronic equipment will ensure that the product will meet all requirements.

The Rex Air Major consists of a transceiver and power supply unit, each separately mounted.

The transceiver comprises a 10-channel crystal controlled tx-rx operating in the 118-130 Mc. band. R.f. output power on full modulation of the transmitter is 4 watts.

The power supply is designed to operate and change over from either 14 or 28 volts d.c. without modification. Current drain at 14 volts is 3.3 amps. on receive and 4.5 amps. on transmit. A pair of switching transistors and silicon rectifiers provide efficient d.c. conversion. The audio output stage, which acts as a modulator during transmit, employs a pair of power transistors in push pull. It is incorporated in the power supply to keep the dimensions of the transceiver to a minimum and to limit the temperature.

Further details may be had by contacting Miss Hocking of Ferris Bros. Pty. Ltd.

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S W L

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Sub Editor: J. M. (Mac) HILLIARD, WIA-L3074
57 Gardenia Street, Blackburn, Victoria
ADDRESS CORRESPONDENCE FOR THIS PAGE DIRECT TO THE SUB EDITOR

Hi there fellow S.w.l's., it has fallen my lot to present these notes to you. I would like to thank our retiring President and Sub-Editor Bob Young for the excellent job that he has done.

The starting off point for many of the Hams of today begins in the S.w.l. ranks, but why do so many of the Hams disregard the average S.w.l.? I admit that many of the Amateurs give much assistance to the newcomer. However there remains a large number who scorn at the S.w.l.

The practice of sending bad reports no doubt could be a contributing factor in conveying a poor impression of the S.w.l. in the minds of many Amateurs. But surely this is no reason to condemn the S.w.l. in general.

Recently a local well known Amateur here in Melbourne, who operates on s.s.b., was heard in one of the most glaring cases of ill manners that your scribe has ever heard on the Ham bands. The said Amateur was in contact with a W station, who was, by the way, S9, when another Melbourne station broke in. This in itself was bad enough. But then the chap that had been working the W promptly started yarning with the local and just left the W out in the cold without making any further reference to him. Surely this is one of the poorest cases of bad manners ever heard on the bands.

Remember chaps, this page depends on you and I am looking forward to hearing from all of you. All Interstate correspondents will be answered and also locally where required.

VICTORIA

At our Xmas wind-up, we held a special meeting with the prime purpose of electing a new President, another Vice-President and a new Sub-Editor. The election resulted in Maurie Cox being elected to the chair with Bob Young as Vice-President, and yours truly as Sub-Editor. Bob was forced to resign from the chair and also as Sub-Editor due to lack of time.

Much discussion took place as to how we can increase the membership of the Group. It was felt that if members had more to do in the Group that more interest would be forthcoming. Many of the younger members cannot afford to buy expensive receivers and it is to these younger members that we must encourage. At the conclusion of the meeting we all had a few cold and soft 807s.

The big event of the year will soon be coming off and of course that will be our Convention at Ballarat, which takes place over the first week-end in March.

Our President, Maurie, has been flat out in the Ross Hull Contest. However, he will not have things his own way as Ian Thomas and Bob Young have not been idle during the Contest. David L3125 has just erected a long wire which is 120 feet long and it is pulling in the signals in fine style. His hearing aid is a dual wave receiver. Very pleased to hear from you David and will be looking forward to receiving further news from you.

QUEENSLAND

Only news to hand from VK4 this month comes from our good friend Afton Westcott up at Atherton. Afton has been on the sick list for several months. We are all sorry to learn of your troubles Afton, and wish you a speedy recovery and hope you will soon be back amongst the DX. How about some of you other VK4 boys dropping us a few notes of your activities now and again?

NEW SOUTH WALES

Our old Buddy Chas. Aberneathy is going well in the Ross Hull Contest, and my spies tell me he has over 1,300 points. Best of luck to you Chas.

I would like to remind you all that I must have all correspondence for this page no later than the last day of each month.

What has become of you fellows in VK6? Apart from Peter Drew, we would not think that VK6 existed as far as S.w.l'ing was concerned. So what about it, you chaps?

Remember this is your page and it is up to you to provide us with news of your activities. But unless you do this, we can hardly be expected to provide news out of the air.

Well that is all for this month, so 73, Mac Hilliard.

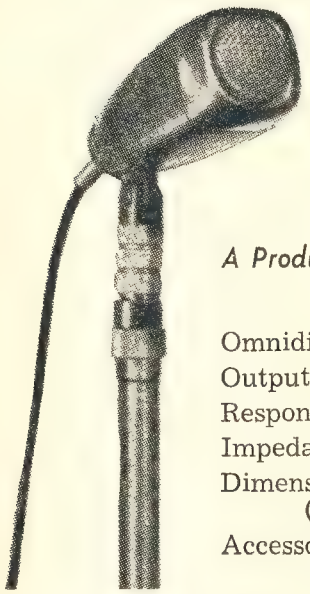
DX LADDER

	Countries Conf.	Countries Hrd.	Zns. Conf.	S.s.b. Conf.	S.s.b. Hrd.	W Stat.
E. Trebilcock	277	282	40	—	—	50
D. Grantley	111	250	38	16	95	34
A. Wescott	84	159	31	9	107	11
M. Hilliard	70	214	33	12	122	11
M. Cox	61	220	29	27	135	16
C. Aberneathy	44	85	27	—	—	14
N. Harrison	38	92	27	—	—	29
P. Drew	33	180	19	7	93	11
I. Thomas	29	134	18	8	88	11
P. Fields	26	133	—	—	—	—
D. Jenkins	10	144	7	—	—	—
H. Burger	6	185	5	1	19	—

NAT. FIELD DAY CONTEST
9th and 10th February, 1963

US

UNIVERSAL SOUND



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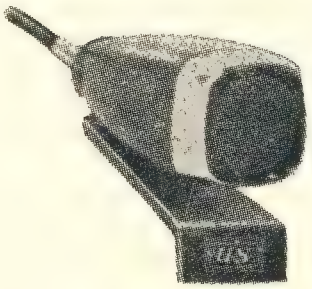

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FEDERAL AND DIVISIONAL MONTHLY NEWS REPORTS

★ ★

(SEND CORRESPONDENCE DIRECT TO DIVISIONAL REPORTER NAMED AT PARA. END)

FEDERAL AWARDS

During the past year W.A.V.K.C.A. awards Nos. 196 to 230 have been issued to the following:—

W6DQH	G2BOZ	VE3BQP	JA3AA
W2NUT	G3DQC	UA0GF	JA7AD
GM6MD	G6VQ	UA3AW	W1HGT
UC2AA	DL1YA	KP4WD	VS1FZ
G2FFO	ZL1ARY	W0VBQ	ZL3VI
XE1CV	ZL3OB	KH6DKA	UA9VB
G2GM	W1EIO	VS6EC	VU2AJ
F9MS	AP5CP	W6MDK	W3RZL
K5UYF	W1UOP	JA1AJU	

Australian D.X.C.C. Countries List in "A.R." January 1963: Amend "Pakistan" to read "East Pakistan" on fifth line.

A. Kissick, VK3KB, Manager.

— . . . —

NEW SOUTH WALES

The Xmas meeting of the N.S.W. Division was held at the Wireless Institute Centre on Friday, 14th Dec., and the attendance was so good it was a battle to find enough seating accommodation.

Essential business was disposed of as soon as possible and the meeting handed over to Alf 2BW who operated the projector and put on a two-hour show of films, the feature film being the "Space Age"—a documentary film of the recent orbital space flight of Major John Glenn. Portion of the film showed pictures taken from the capsule in orbit.

The President (Max 2MP) moved a vote of thanks to Alf for his capable handling of the projector, but more especially for the fact that Alf has donated the whole 16 mm. projector and sound equipment to the Institute.

After the films Max wished everyone a Merry Xmas and closed the meeting for refreshments served from the kitchen under the supervision of Gerry 2AGS.

Another Xmas Party was held by the Griffiths Radio Club on Sat., 8th Dec., at the residence of the President (Freda 2SU). Visitors were present from Hillston, Tabbitta, Leeton and Narrandera. Blind fold tx hunts, dancing to bagpipes and a barbecue were held on the lawn and there was a buffet table well stocked. Musical items were supplied by Mrs. Savage (XYL of 2ACS), Doug and Paula (harmonics of Freda 2SU). Approx. 80 Hams and friends attended the function.

The last Council meeting for 1962 was held on 20th Dec. and the Council appointed Pierce 2APQ as organiser of the forthcoming Federal Convention to be held at the Wireless Institute Centre over the Easter holidays. Pierce has a big job in organising such things as the Federal Dinner, accommodation for delegates, transport to get the delegates to and from the meetings, meals, reporting facilities, etc., and he would be pleased to hear from anyone who can assist him, ring Pierce at UY 6125.

The Education Officer, Harold 2AAH, had a spare night over the holidays so he knocked up another tape entitled "A Survey of V.h.f. Aerials," by 2AAH. This tape runs for 65 minutes and is illustrated with 32 slides. For particulars, contact Harold.

It has been the custom from time immemorial, to set aside the February meeting for the v.h.f. boys, so we are looking forward to a good lecture by the V.h.f. and T.v. Group. 73, 2VL.

HUNTER BRANCH

The Christmas meeting of the Branch was held on 14th Dec. and, after the shortest business session on record, the 22 members, associates and visitors present settled down to an interesting evening of colour slides presented by Bill 2XT. These featured his recent trip to the Far East and were liberally sprinkled with pictures of particular Amateur interest. At the conclusion of the show two very interesting items, a transistor t.v. and transistor radiophones were displayed, and used. Both created quite a deal of discussion centreing mainly on presents for the festive season. The night concluded with the usual ragchew and wishes to all.

During the holiday season activities have been much as usual, but the v.h.f. boys have been taking particular care to get the 50 Mc. gear in trim for the excellent openings which have been appearing on that band. It is even reported that Mac 2ZMO wishes to have a telegram sent if anyone wants to contact him on 144 as he is so busy on 6! Others on the 50 Mc. bandwagon are Ian 2ZIF, Des 2ZDN, and Stuart 2AYF, to mention but a few. Still in the v.h.f. spectrum, it is interesting to note that there has been an upsurge of 144 preparedness in the coaly city. Peter 2AIY has a brand new high power rig almost ready to go and when I say high power, I mean just that. He burned out a 0-5 amp. r.f. meter in the dummy load while testing the gear! As for the other in the 2PZ vicinity, things are moving, but slowly. Chris is waiting for his aerial pole to grow a little taller so that he will get the wire a half wave high. Ian 2AJF has ironed out the t.v. troubles and now has a modulator working. It is a very efficient 90 watt zero bias giving an output at the present of 4¼ watts—flat out.

Two more members have been notified of their success in the limited examination. They are Bill Sinclair and Len Daley. Bill tells me he is ready to go on the air as soon as the licence arrives. Len is building but how close to being on the air is not known.

Out by the lakeside is one very proud Amateur. Jim 2AHT has been notified of his winning of the "CQ" world wide DX Contest. This means another attractive certificate to grace the shack wall. In addition, he has all the cards ready for D.X.C.C. which is really fast work considering the short time Jim has been active during the present spell of operation. Another consistent signal is the plea from Bill 2ZL, for someone to lend him a mobile crane. Bill is having some trouble getting labour to install the new piers for the railway and is thinking of borrowing a few sky hooks and some rope.

Neil 2ZCU hopes to be out of hospital and back on the job again soon and it is hoped that by the time you read this he will be home again. Another member on the sick list is Ern 2FP. All the best for a speedy recovery and return to the old firm where, by the way, things are going very well since Lionel 2CS returned. It is said the water supplies are now in very good hands.

Rodney 2CN has a new 10 over 10 long tom for 2 and is putting out a good signal, as is Ron 2ASJ, now a regular 2 mx man. Another seldom heard signal on 2 is Ron 2AAI, while Kev 2ZKW is having some trouble with hum. He finds this has something to do with the anchorage point for the beam. Varley 2SF is now on one band at a time, which is more than I can say for the signal from this QTH, so progress is being made. Les 2RJ apparently has had a great deal of success with mobile operation in VK3, so ask him about it at the next meeting.

Gordon 2ZSG is busy with audio troubles, but still manages to get a signal out, but I haven't heard Tony 2ZCT of late and a report says he has changed employment. Bill 2XT has little time at this end of the year and is still busy dispensing as is Bob 2AQR although it's quiet at home now since number 3 son left for Narrabri. Norm 2ZNF still is trying to get some signals out of the AMR300 and, here's something—John 2XQ is re-building the rig so you can see that 1963 has begun well all round.

We'd all like to see you at the next meeting which will be held at the Newcastle University College on Friday, 8th Feb., so why not come along. The lecture room is very large and we'll keep a chair for you. 73, 2AKX.

— . . . —

VICTORIA

Possibly one should start by apologising for lack of notes the last two months. Luckily for me, some kind person supplied notes on the State Convention, and as I was not at the Nov. Council meeting that leaves me in the clear for the Dec. issue. The Dec. Council meeting was too late for Jan. notes, and at this late stage I'm rather hazy about what took place. The notes I made have been mislaid, but do recall that Council spent much time discussing the proposed additional facilities at the rooms. Firstly, the library section is to be re-housed, in fact the new bookcases should be installed and in use by now. The test bench project appears to have come to a stop, due to the resignation of the moving force behind it. This matter will probably be fixed early in the new year. The Moon Bounce project is a dark secret (at least to me). Can anybody produce any info.

Council will next meet at the end of Jan., but as I will not be there, perhaps our Publicity Officer will send some notes to "A.R." What about it Harold?

The Institute suffered a sad blow in the death of Bill 3TX early in December. Bill held a licence since way back about 1912. For the last five or six years he had been closely associated with the Publications Committee as circulation manager. 3RN, 3AFJ, 3OM and 3AOM were among those who attended the funeral.

Now that these notes are being typed, I don't feel so kindly towards the printer. As they can now be read, Parsons will have to have his space reduced in my favour. After all, I am a friend of the whole committee, etc., etc., ad nauseum. To show him there are no hard feelings, I'll publicly thank him for his Xmas Greetings and at the same time wish him all the best for 1963. I'll even go further and tell him there are strong indications that his old "Arch Enemy" will be heading for the City of Pubs during February, and when last seen was checking his array of lethal weapons.

The friendly net (144.86 Mc.) is growing with the release of further carphones, and is now spreading into the country areas. They now form a solid core to W.I.C.E.N. Fortunately their services have not been required for any major emergency this summer, but there is still a couple of hot months to go. Plans are in hand for similar nets on other frequencies. The net was ready for action one night in mid Dec., when a boy was missing in the Dandenongs. Several members were in the area assisting and the boy was found before full scale operations were needed.

Heard by the grapevine that communications by the people patrolling the Nullabor during the Empire Games were not all that could be desired. Has anybody any first hand info? Could make an interesting article for the mag.

Saw 3ALK recently and sorry to say, he has been far from well. Maybe too much effort into the metalwork for 3WI. 3AHN another who has been on the sick list, but has since been heard operating mobile marine in contact with the heir to the family fortune, 3AAA, who was operating mobile. Talking of sick lists, what is wrong with the Ballarat air.

CENTRAL COAST FIELD DAY

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Be on a winner—be at the best field day in VK2.

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N.S.W. DIVISION, W.I.A.

NTH. COAST & TABLELANDS

ZONE CONVENTION

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12th to 15th APRIL, 1963

144 Mc. tx hunt, 40 mx tx hunt, all band scramble, general entertainment.

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3ADW, 3ATP and 3AFJ all attended sick parade. Will the Shepparton boys please note that no wogs, viruses or similar are wanted at their Convention. 3ATK has forsaken his Merry Oldsmobile (1935 vintage) in favour of something mode modern. Having spent the last year building mobile equipment for 6v., he now has to modify it for 12v. 3CX has acquired a Drake rx and apart from c.w. can now copy duck talk (how's that one Parsons?). 3AAF busy looking for a v.h.f. portable location to beat all known locations and believes he has found it. We should here more of the in the near future. Distance records are the object in mind.

The National Field Day this year looks like being interesting in VK3 this year. The three main groups are normally the VK3 Council, the Magazine Committee, and the Moorabbin Club. This year 3WI looks like being in trouble as three members of Council are Moorabbin boys, the President will be overseas, and one member will be with the mag. boys. The Secretary may not get a leave pass (unless he started training the young lady from the beginning). The mag. boys are better organised this year with the sole intention of showing Moorabbin the way. This year they will need more than 3APC, they will need the whole bottle! What about F.E. entering a group? Let us have the opportunity of working 3WIA. The ball's in your corner, Bill and Max.

Most of us, at some time or other, have been approached to "Just have a look at my television and tell me what's wrong with it." Well, I've just had this experience with a novel variation. Being by nature a shy but helpful type (PanSy won't think so.—Ed.), reluctantly toddled off to have a look at the monster. Now if ever you've climbed out of the works of one of those things to find a female form draped in a rather skimpy bikini standing by watching, you'll know what I mean. Possibly somebody years older than myself (like 5PS) could handle the situation, but not me! I couldn't have even changed a tube. Can anybody tell me if this study of a heavenly body while delving into a t.v. rx makes me a radio astronomer? Ouch.

MIDLAND ZONE

Zone members regret the sudden passing to the ranks of Silent Keys of our esteemed colleague and friend, Tom Briggs (3JW) on 1/12/62. We extend our sincere sympathy to Mrs. J. A. Briggs and family on their sad loss.

Anyone in need of some first class equipment would be well advised to investigate the gear available at the QTH of the late VK3JW. Apart from the acquisition of some good gear, you will also be assisting Mrs. 3JW.

On 16/12/62 the Midland Zone conducted their quarterly general meeting at the Bendigo Technical College, which was attended by VKs 3SV, 3APJ, 3ND, 3FO, 3KO, 3ZIK, 3ZIJ, 3FY, 3ZNE, 3AQU. 3VV also called in for a short period but due to prior commitments was unable to stay for the meeting. Apologies were received from 3ACN and Noel Meagher. Special thanks go to Ralph Burrell for arranging the meeting hall and it was disappointing not to have had a larger gathering. There were, however, discussions on matters of importance in relation to W.I.C.E.N. activities and lack of suitable equipment, which is now being attended to.

I have no apologies to offer for the non-appearance of the Zone notes in the Jan. issue of "A.R." as they were in the post on 6/12/62. What happened Ed.? (As notified in Nov. "A.R." the Jan. notes closed on 1st Dec.—Ed.)

Activities on Zone hook-ups are reasonably favourable and on the increase. There have been some DX break-throughs on 6 mx of which our President (Don Carr) has taken advantage of when he had the opportunity, as well as operating on the 2 mx band. I am affraid I am not very well informed on the activities of Zone members generally, but due to the holiday period this is to be expected.

My own activities have been confined to operating on 20 mx DX and some local 40 mx QSOs. 3AQU is also active on 20 mx DX, operating from Kyneton with a Q4 S4 signal in Castlemaine. Please note, your copy of the minutes of our last meeting held at Bendigo will be forwarded together with your next meeting notice in order to reduce postal costs. Our funds just won't stand two despatches. 73, 3ND.

EASTERN ZONE

Ken (ex 3ZNB) and Ross (ex 3ZAQ) now have their full call signs. 3OI (Moe) and 3NS (Warrigul), both stations operating initially on 40 mx. 3AMS at Foster and Martin 3AMV at Warragul hope to come on in the next few weeks. Jack 3AJK is still winning more countries on 14 Mc. phone; he now has over 20 countries marked up. The v.h.f. boys have been working their fair share of DX.

The Eastern Zone members are quite keen in setting up an emergency network throughout the Zone. The v.h.f. boys are buying f.m. carphones, two are already installed. Stations willing to operate on 3550 kc. please contact David 3DY.

Our Xmas party at Alf's went off extra, again. Best wishes and DX to all Zone members for 1963. 73, 3ZCG.

WESTERN ZONE

Among those representing the Western Zone at the State Convention in Ballarat were Keith 3ATS and Wilson 3AFU. Wilson didn't come away empty handed as he collected the prize for "most miles travelled." Keith 3ATS, just out on the Horsham side of Murtoa, should soon be sporting one of the best 40-80 mx antennae in the Zone. He is at present preparing to erect a second 60 ft. steel tower. With a half wave on 80 slung between these, the QRN won't stand a chance. Merv. 3AFO has now completed a low power emergency transceiver operating from a 12v. battery, a permanent addition to the shack "just in case". He is also looking around for some husky Hams to help place his new 40 ft. windmill tower in the vertical plane. When this is done the top will be adorned with a cubical quad on 20 mx.

3AZ, Hugh McLachlan, better known as Mac, is now residing in Horsham. A s.s.b. man, Mac is preparing to operate on 40, 80 and 20 mx. Vic 3AEQ, a regular on the weekly Zone hook-up, is now approaching the busy time of the year, so may be absent on most Wed. nights until things settle down. Neville 3AAQ, formerly of Shepparton, is now living in Ararat. Welcome to the Western Zone Nev., see you 8 p.m. Wed. on 3650 kc. Chas 3IB is at present having difficulty working DX on the h.f. bands due to heavy QRN of the man-made type. Seems as summer approaches the noise gets progressively worse. The source of trouble is the h.v. S.E.C. power mains. Perhaps a decent shower of rain will cure things Chas. Bill 3AKW is about to have the S.E.C. mains connected. Hope Chas' troubles don't frighten you, Bill.

This is the first rotation of Zone notes correspondents on a roster system as decided at our last Convention, so in fairness to the next in line, let's see a zone-wide roll up at all future hook-ups. 73, 3AFO.

— . . . —

QUEENSLAND

Well the wheel has spun around again and picked me up for the second time. I thought we had struck gold when Don Marshall took over our "A.R." sub editorship and news service, and so we had, but Don is busy building a bower for his bride to be and won't be with us for a while. Thanks for your help Don and all the best to you and your YL. Who is going to do the job now? I'm not a 4PR that can take several jobs at once. Get off your ——— some of you chaps and have a go. What about a country member for a change?

Talking about country members. At time of writing Claude 4UX came down through the rain to spend a week or two in Brisbane. Frank 4FN was about though I didn't contact him and Basil gave me a ring one night but I didn't meet our Mt. Isa mobileer 4JC; next time I hope. Always pleased to have country members make themselves known even though it might only be over the phone. That's not bad is it. I guess most of our country correspondents are on holidays as little in the news line has been received here. See that some comes by the end of the month fellars.

What action have you taken on the State Council nomination form in "QTC"? If the person nominated can forward or have forwarded a few words about himself it will help country members, in particular, in voting, e.g. number of years a licensed W.I.A. member, offices previously held in the W.I.A., if any, occupation, age, etc., but it is up to the person concerned to supply this information.

Please read the requirements for nomination as several quite unacceptable forms were received last year.

Has anyone given thought to what should be done if sufficient nominations to form a Council are not received? Should the Federal body take over? Give a few more thoughts to the formation of Council and do something about it.

By now you should have Pat's (4KB) notes on the constitution and realise it is quite a problem, taking up real time, to find a good solution.

Glad to see Jan. "A.R." with a couple of articles of VK4 origin printed. Should be more of it. (Always pleased to receive articles. —Ed.)

I wonder if we will have passed our membership of 400 by the time this goes to press? Don't say it can't be done—a lot of people thought it a great joke that we thought of winning the R.D. Contest, but we ran pretty close. Oh for those 12 or 14 logs—how valuable they would have been. Where's my handkerchief.

Have you forwarded your Jamboree-of-the-Air report? Better late than never. A very nice card and letter of thanks to hand from Kallangur Group.

Ron Reed, ex 2DR, ex 4DU, now 9DR, is now radio officer at Christmas Island in the Indian Ocean. Don, who will be coming back to Amateur Radio after 23 years, was once Secretary of the VK2 Division when Bill Moore, Jim Corbin, Morrie Myers, Peter Adams and others were on the committee at that time. Don has a 200 ft. tower and a 150w. tx ready to go.

In the meantime have you any radio courses, text books, old copies of "CQ," "QST," "A.R." etc. for a radio club technical library that Don is assembling in conjunction with a radio club he is forming on the island? Contact Box 638J, G.P.O., Brisbane, and we will give forwarding instructions.

On 30th Nov. one of our most interesting visits was made to the Brisbane City Council Standardising Laboratory at Mayne Junction where most of the commercial measuring instruments used in Qld. are calibrated. Most of the equipment measured volts or amps to too many decimal places for the average Amateur, but the various demonstrations, including c.r.o's., etc., were all very worth while. Thanks to Mr. Gow, engineer-in-charge, and to the B.C.C. for the excellent supper provided.

Well I've been stricken with the B.C.C.-S.E.A. merger and laryngitis apart from personal problems, but I would like to be portable for the National Field Day. I'll be trying. Will you be in it? Let us see a few more VK4 names this year.

Sam 4CZ is getting about again and by now I hope is back to normal health. Sam is now with the S.E.A. Bill Jehn, our s.w.l. registrar, had such a good time in Adelaide he didn't even have time to look up 5PS.

Thanks for giving Alf 4OL a call when he is running the 4WI session on Sunday morning. Rick 4VR usually carries on after the news on 20 mx band and would welcome a call. What about it northerners? If you can't stay home for the main hook-up on 40 mx, just slip in your call sign when you can, as we just like to know you are about. You can always get Alf around 7146 before 0900 hrs. and pass on any items of interest—he will appreciate same.

By the way, in the first call please try and limit yourself to your call sign and keep reports and business to the second or third call. It's sure more will participate in the first call in if there is no delay. 73, 4PJ.

TOWNSVILLE AND DISTRICT

As these notes will be the first for the New Year may I take the opportunity of wishing each and everyone a Happy New Year and the pious hope that you all have better luck in landing that rare DX. At the present moment am listening to the boys on the Kookaburra Session and from all accounts the band on 7 Mc. is not too good as they are experiencing difficulty in hearing each other. While on this subject, the old cry what has happened to the boys on 14 Mc. on Sunday morning at the close of the W.I.A. hook-up. At times 4VR and 4ZM are heard and seems I cannot always break them.

No advice from my spy on the Lower Burdekin as to what is happening down there and as a result find it hard to pad the notes. Locally not much doing on the air but recently happened to hear John 4DD, and other than Charlie on 7 Mc., it is pretty dull listening for them. Of course my many QSOs with Bert 4LB don't rate a mention as we can almost hear each other if the windows are open. Basil 4ZW, from Cairns, just called in with the family en route to the southern States for nine weeks sighteeing and reports that the Z boys in Cairns are making hay while summer is here on 50 Mc., working south and playing around the town on 144 Mc., while Bill 4ZBE has worked into VK6 again and has quite a number of QSOs with the boys down south. 73, 4RW.

— . . . —

SOUTH AUSTRALIA

The monthly general meeting of the VK5 Division for Dec. was held in the clubrooms to a capacity gathering of members, together with an increased number of the female sex. The night took the form of a Xmas Get-together and was the usual great success, judging by the reactions of all present, and must have pleased all those behind-the-scenes

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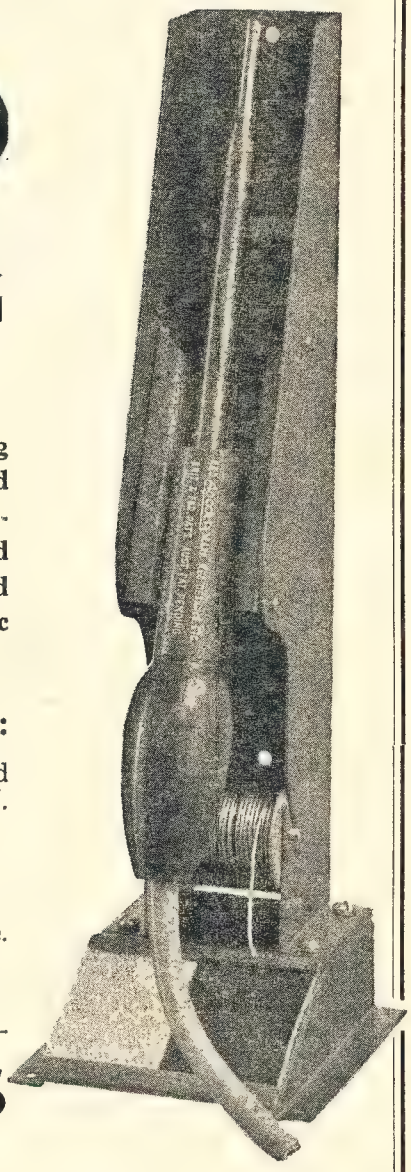

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responsible for the arrangements. Last year was the first time that any XYLs or YLs attended and this time their numbers had increased considerably, and as I said last year in the notes, it is becoming increasingly apparent that this annual gathering is fast approaching the point when it will have to be considered a social event and not just a get-together of the boys. Quite possibly there will be a few of the die-hards who will not agree with this, but in our democratic set-up the majority must prevail, even if the skies fall during the change-over from the old to the new.

Our President (John 5JC), unfortunately, could not attend owing to being in hospital for the purpose of having a few more db's. added to his hearing, and Phil 5NN, the Vice-President, did the honours for the evening, to good purpose too, if I might be permitted to say so, and declared the meeting open sharp on time. Business being suspended for the night, the entertainment commenced and three excellent films were screened, and judging by the applause at their conclusion, were much appreciated by all present. QSL cards were then distributed by George 5RX, and at the same time the tables were set up, loaded with goodies prepared with loving care by Marlene and Christine, the XYLs of Brian 5CA and Geoff 5ZCQ. May their shadows never grow less.

Well, that's it gentlemen, once again the "Xmas Do" has come and gone, and once again the same old helpers did their annual chores. The thanks of the Division are theirs, and if they don't get their dues on earth, then let's hope they get them in Heaven, or anywhere else they might be directed to! Oh, and before I forget, to those ill-mannered and coarse types who suggested the 5PS household would be living high for the next few weeks or so, that pile of goodies that I carried out to my car at the end of the festivities was delivered, as is our custom each year, to the St. Mary's Home for Orphan Children, the Matron of which sends her grateful thanks to the members.

To all of the gang who hopped in after the eats were cleared away and washed, wiped, swept and dusted, Council extends their grateful thanks, the same goes for anybody who assisted in any way. Nice work fellows. Oh, by the way, the attendance was around the 150 mark—not a bad roll-up for an organisation that has been described in some quarters locally as "dying on its feet".

Incidentally, this meeting was the last to be held in these club rooms and for the future the meetings will be held in the Builders' and Contractors' spacious rooms on South Terrace, on the fourth Tuesday night in the month, instead of the first Tuesday in the month as of yore. This change of date will probably cause some temporary confusion among the members who have formed the habit over the last 40 years or so, but the VK5 Amateurs are right on the ball with such alterations and it goes without saying that within the next four or five years or so, only a couple of them will still be turning up on the first Tuesday night as usual, and will still comment "Why doesn't someone tell me these things"!!!!!

I have received that long-awaited photo of the recent gathering of the clan at Crystal Brook and will forward it with these notes. I would suggest to the Publication Committee that they put on their dark glasses to examine it, because a bigger or more dangerous looking lot of desperadoes gathered in one spot at one time would be hard to find. I never slept for three nights after merely stealing a glance.

The Port Pirie Amateur Radio Club held a meeting at the home of the Secretary (Bruce 5ZEG) recently and a good attendance of members was reported, including also a new member and two interested visitors. Inspector Bruer, of the local constabulary, came along and gave a very interesting talk on Civil Defence, and later nobly withstood the bombardment of questions from those present. A very enjoyable and interesting time was had by all. Plans are going ahead for the schoolboy instruction. Bert 5EQ is showing the lead in this by organising a film show to be held in the high school with Jim 5ZMJ as the projectionist. Carting coals to Newcastle for Jim. Designs for the QSL card for the Club are being called for and many suggestions, some rude, some coarse, are being received. It is expected to find something which will appeal to all tastes (probably that train going up and down the main street again!!). Thanks for the news, Bruce.

A real old-timer in Roy 5AC was heard recently portable from Wellington. He was with the Customs for more years than I would like to own up to, and when he retired he joined up with a well known brewery in our fair city and quite openly admitted to me in a contact one day on 7 Mc. that he was never happier. Nice to hear you Roy, what about coming to a meeting one night?

Tom 5TL still spends his Saturday afternoons at the local rifle range and if all is to be believed, has not lost any of his cunning in hitting the target. He and I were once fellow members of the Postal Institute rifle club, as was Inky 5WF. Incidentally, there is not a word of truth in the oft-repeated statement that I once scored a bulls-eye at 500 yards by throwing the rifle at the target!

Tom 5QL at the moment of writing is enjoying a well-earned holiday and expects to be operating portable a.m. Slumming I expect he would call it. So far I have not heard him on his portable a.m., but should I do so I will be hard put to keep the sneer out of my voice. A.m., how low can one get!

Heard Joe 5JO on 7 Mc. the other Sunday morning. His XYL Nellie was doing a good stick on the mike and was attracting all the stations on the air, like flies to a honey pot. They both seemed excited about their coming Xmas tour around the country side, complete with portable set-up and all mod. cons.

side he admitted to listening to the Best Broadcasting Station in VK on his way down and to cap it all, he called in to see me at the station. What more can I ask?

Comps 5EF was also at the Xmas "Do" and together with several other s.s.b. devotees, excelled himself with the soap and water at the washup after all the white ants had gone home. He is still being bothered with the knee trouble, and has almost reached the stage of having the bullet, no cartridge, removed.

Well, one certain paragraph each month in these notes has now been taken away from me. Yes, with pride and due modesty, I can now announce that my Worked Elizabeth Award arrived over Christmas, some nine months late, but nevertheless welcome. Despite all the insinuations, the coarse suggestions that I was a "Ring-in," the threat to put the application before the F.B.I., and last but not least, the cruel inference that some of the stations I named had never heard of me, I now have the award framed on the door of what is known among my cohorts as the "Single Sideband Room"!! ('Tis said in VK3

Some of the Amateurs present at a gathering at Crystal Brook recently. Left to right:
Back row: VKs 5ZMK, 2nd operator at 5RJ, 5ZBZ, 5LD, 5ZBI, 5CO, and 5WO.
Front row: VKs ex-5VM, 5NW, 5RJ, 5BB, 5AP, 5EQ, 5ZJM and 5EN.
Also attended: VKs 5FM, 5ZEE, 5YA, 5DS, 5ZAH, and 5LL.

Jeff ex-ZL2SK, from Napier, N.Z., recently passed through Adelaide returning from the Empire Games. Having now toured VK land by car, he was en route to Sydney to embark on a tour of Europe and the U.K., etc. Many of you who are reading this will remember his XYL Peta (ZL2ABJ), unfortunately now a silent key, drowned in heavy surf in attempting to rescue her brother-in-law. It is of interest to know that the Napier Chess Club, of which she was President, and the Radio Club in that district, have erected a clubhouse in the centre of that city as a combined memorial. The new clubrooms house the local emergency network control station, now operating under Peta's old call sign—ZL2ABJ.

The Woomera Radio Club, 5WC, has at last moved into its new clubrooms and with the advent of "Beaut" new gear, should become very active again. Membership and interest is steadily increasing, although the old stalwart Bernie seems to have given away radio in favour of playing the organ. In fact, an electronic version is being planned. Trevor, the Club President, was quite thrilled to find that the first tx he ever built even worked DX. Ian 5QX is vainly trying to talk him into building a modulator to keep it company.

Eric 2AVS has not been on the air much since he found himself an XYL, but his little tx still does sterling work, especially with the DX. Ask Ian, he will guarantee it. Keith 5EJ puts in an occasional appearance at the 5WC clubrooms and John 5EV still cannot get rid of the job of Secretary and is kept very busy in that respect. He still finds time, however, to cover himself in grease and perspiration delving into the mysteries of internal combustion engines.

Ian 5QX was down in their fair city for his annual holidays and managed to make the Xmas "Do," although he was leaving for Woomera next morning at 4 a.m. or some such outrageous time. To get to my right

that the award was created specially for PanSy because his signal cannot get much further than Elizabeth.—Ed.)

Luke 5LL, back from his trip around VK7, but was only back a few days when he went down with a stomach upset and had a bad week or so of it. Quite taken up with VK7 with its points of interest, but cannot help but feel that a lot more publicity could be given to a number of very interesting places and buildings throughout VK7, which take some finding without such publicity. Strangely enough, my spies reported that he and Harold 3PW were at the North-Western Zone Hamfest, but as no mention is made of this fact by the scribe for that area, I can only assume that my spies were leading me up the garden path.

Everybody at the moment is trying to get on the bandwagon of the Youth Clubs, and I feel that we in VK5 are apt to forget that the Brompton and Bowden Mission Boys' Radio Club (5BA) has been in existence since July 1955. Started originally by Howard 5XA and Joe 5JA at the request of the Rev. L. F. Ashman, the fort is still being nobly held by Joe, who is the teacher and leader of the boys whose ages range from 9 to 14 years. Howard unfortunately had to give the job away but did yeoman service for some years. The club is the only member society of the World Association of Methodist Radio Amateurs and Clubs whose founder and secretary is Arthur W. Shepherd G3NGF. Nice work, Joe.

Carl 5SS and Frank 5MZ, the terrible twins, noticed at the Xmas meeting, and both seemed in the pink. Their parting shot to me as they left was that they QSO at different times these days, just to trick me. Fat chance!

Luke 5LL tells me that he renewed acquaintance with Des 7DK (ex5DK) whilst in the Apple Isle and found him well and contented. Des wished to be remembered to all of his one-time VK5 friends.

Heard Rex 5KY and Reg 5RR having an old-time QSO on 7 Mc. during New Year's Day afternoon. By an old fashioned QSO I mean a QSO in which both sides are as natural to listen to as if they are in the same room, and with an entire absence of unnecessary technicalities. They were on for some time and discussed a variety of subjects from New Year resolutions to proposed shack renovations and painting. Very easy on the ears, fellows, it wouldn't get either of you a Nobel Prize for scientific discussion, but it sure was Amateur Radio at its best.

One of my female spies, a seductive bit of the doings, informs me that Jim 5JK is disporting himself in a new car. So far I have not caught up with him, but something whizzed past our QTH last night with a loud toot-tee-toot, and if that was not our debonair clarionet player himself, then I need glasses.

By the way, my little paragraph regarding Jim 5JK being a clarionet player of note, foxed out the fact that Rex 5KY used to be a member of the combination, playing the saxaphone and doubling at times on the squeeze-box. I might have my instruments mixed up a little, but at least two of our members have been hiding their light under a bushel.

Received a very unexpected telephone call from the Dept. of Civil Aviation this week, and was quite surprised to hear a charming young lady ask me from the other end of the line, "Did I represent the radio magazine 'Amateur Radio' in Adelaide?" Fearing possible libel actions, unpaid debts, or possibly recriminations from the Victorian Dustmen's Union re the matter of unwanted chassis, I somewhat cannily said, "Well, I have some slight dealings with them. What can I do for you?" Well, to make a short story longer, and thus upset the new year of Ye Ed., it appears that D.C.A. have heard of some conversation regarding the conversion of AR7s contained in some back issues of "A.R." and although they had contacted all booksellers, newsagents, libraries, etc., etc., for back copies, they had no luck. Well, to make a short story even longer, ho-ho, I was able to lend them all of the back copies they required, to the mutual satisfaction of all concerned. So there you are, we are famous. Joking aside, the Publications Committee might consider it worthwhile to send a copy of the mag. to each Divisional Public Library, all other technical publications do. Just think of it, my monthly mutilation of the English language, as she is written, might yet grace the shelves of all Australian Public Libraries! Fame at last!!

Having made a 1963 resolution not to write too much copy for the magazine, ho-hum, and a couple of hum-ho's, I must now stop. However, many thanks for all the cards and letters, coarse and refined, received from everybody, and I can only say with traditional modesty—I get as much fun out of writing the notes, as apparently the readers do. My cup of happiness is brim-full at the moment, because nobody in VK3 could find any Pansy Xmas Cards to send in retaliation. Between you and I, fellows, my stocks are getting very low over here. Can anybody help? 73, de 5PS—PanSy to you.

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WESTERN AUSTRALIA

Following my predictions recently in regard to what became known as "Games Fever," I can only say "I told you so!" The moment of crisis occurred at about 4 p.m. on Dec. 1 and the patient was declared out of danger. In fact by the time Sunday morning came there was practically no signs of the fever left, and the 50,000 people, who had been so violently affected the day before, found they had nothing to do except be a little sad that the whole thing was now over and they must now commence the long trek home to various parts of the world, not to mention various parts of Australia.

The biggest thing that I am sorry about is the fact that my t.v. set was on from 9 a.m. Sat., 1st Dec., till 11.30 p.m. that night. This apparently was too much for it and at the time of writing still hasn't been fixed. Anybody know a good t.v. technician in this area? Alternatively, anybody want to buy the 16 pieces I have spread over the lounge room floor! What's that? No! You can't have that piece there. That's the neighbour's daughter. She only came in to watch the Games!

Presumably, my spies are still doing a recovery bit from the Games, for I have had no reports for some time now. At least I presume that is what has happened.

Lance 6LR is having trouble with a pirate. The information has been passed to the right quarters, but all Hams are warned, so if you contact a bloke giving the call 6LR and you know it isn't Lance, see if you can pin-point the signal.

Heard an interesting tape recording recently. Bill 6ZBJ, a new Ham, had taped some of the 6 mx break-throughs recently. VK3, 4, 5 on the ether and even 9AU. Fine biz, chaps. Keep the good work going.

Still on 6, believe that Brian 6VV at Geraldton has been in contact with Bob 6BE every a.m. lately, although sometimes has been down to c.w. copy, contact has still been maintained. Brian 6VV has also been cross-banding with Don 6HK, from 2 to 6 mx. What about a note about the activities either or both Brian and Don? Fine biz, all round.

Another Brian 6ZDE has been doing some heavy iron work on a choke recently. The core is about ½ a cubic foot and Brian hopes to convert this to a transformer which, by the use of silicon rectifiers, will give ½ an amp at 3, 6, 9 or 12 hundred volts. What! All that meat and no potatoes? How about an article on the job, Brian, when you have finished. Brian's cohort, Bob 6ZDP says he hasn't been doing anything, but I suspect he's just scared of his XYL (who isn't!).

Dennis 6AW says he hasn't got an antenna for the b.c. band, 160, 80, 40, 20, 15 or 10, but he is going to have a beauty on 6 and an even better one on 2 mx with a 12 element, 6 over 6 waving about on his extended tower. So watch out for the big signal.

Great excitement at the QTH of Alyn 6ZDM recently. Alyn's XYL presented him with a lady junior operator. Alyn was so pleased, you'd have thought he'd done the whole job himself. All the best to both XYL and babe, Alyn, and try and keep your chest in, other people can produce daughters too, you know.

By the way, there is a job coming up in the new year for somebody. You may have heard of the efforts made in the other States to organise the young people who are showing an interest in Ham Radio. Well, the same sort of thing is badly needed in this State. So give it some thought if you are interested in preserving the craft, if nothing else. Hop in with your offer to help the youth of our State.

Talking about new jobs, reminds me, Council is hoping to improve the Bulletin presentation in 1963. So you literary types are required for the magazine committee.

As it is 1963 by the time you read this, may I extend the compliments of the season to you from all members of Council and all other members of the Division. 73, 6LS.

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TASMANIA

The holiday season has produced a very good crop of mobile and fixed portable stations. Noted Ted 7EB at Burnie, Snowy 7CH and Ken 7KA on the yacht "Moorinna" around the southern coast, Lee 7KC with his recently installed car equipment, motoring soberly around Hobart, Den 7DK ("the voice of Decay") mobileering nimbly around the Island, Bill 7YY from his country residence, "Checkers," Port Davey; myself, unrigged, paid a call on VK2.

We are sorry that our friend, Jim 7JO, has seen fit to uproot his antenna and re-plant it at Launceston, and we confidently expect to hear Launceston on the air much more than hitherto.

Den 7DK and his XYL Verna (the "Den Keeper") have bought a house in Launceston. We believe they moved on 25th Jan. This should ensure that the Launceston air is now well frequented.

We in Hobart were delighted to see again Brian 7ZBE back from passing his training course in VK3, in preparation for a year of cold feet and icicles on his nose when he is deported to Davis Base in Antarctica, where he will be operating under the call sign VK-0BE. (Any similarity to civil dignities bestowed on Royal occasions is purely coincidental, Brian assures us.)

Charlie 7KS and Max 7MX were both mobileering on the mainland during Dec., playing fox hunts on a large scale, to judge from the way they chased each other about.

Andy 3UJ was a visitor to our shores over Christmas and his 15w. was heard pumping out a good signal. 73, 7ZZ.

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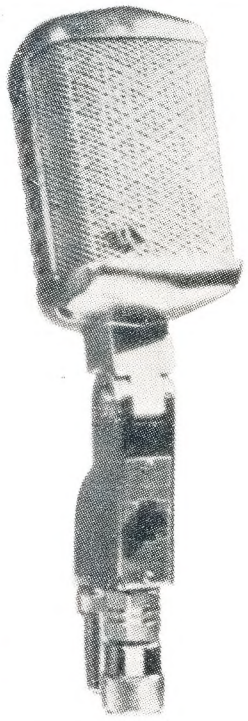

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